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The Lancashire Cotton Industry

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The Lancashire Cotton Industry

A Study in Economic Development

BY

SYDNEY J. CHAPMAN, M.A.,

Stanley Jevons Professor of Political Economy, and Dean of the Faculty of Commerce in the University of Manchester

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PREFACE.

THIS essay is intended chiefly as a description and explanation of the typical forms that have appeared from time to time in the production of commodities, the marketing of commodities and the distribution of income, in the Lancashire Cotton industry. It is, therefore, far from being complete as a history or even as an account of the Cotton industry. As a rule I have omitted events which do not bear closely on the industry's internal development, however interesting they might be from the point of view of economic history broadly conceived. Questions connected with the magnitude of the industry and its successes in competing with rivals lay outside the scope of my enquiry though they border upon it. As to foreign trade I have been concerned only with the manner in which it is conducted and the links by which the demand for Lancashire goods abroad is connected with the mill and the factory. My work in short might be taken fundamentally as some notes for an industrial morphology. On the whole I have taken for granted, neither describing nor analysing, the environment and the changes in environment of the Lancashire Cotton industry—for instance those determining its size—whereby some of the developments herein described have been conditioned. Had my study been made comparative it would have been improved, but its appearance would have been indefinitely delayed.

In certain chapters much is said of the opinions held by those who share in the earnings of the Cotton industry. Such opinions, as to the natures and grounds of wages, profits and control, have played some part in settling industrial forms, the actual sharing of wealth, and the quantity of wealth produced. They have varied with the character of the industry and the general lines of social advance. It has been a striking feature in the history of the Cotton industry that the classes of labour (employers and employed) which unite in producing have frequently acted under the influence of different guiding notions as to their relations to one another, and the grounds for their several shares, and have been brought on several occasions to a deadlock in consequence. I have tried to indicate the general outlines of these guiding notions—the fundamental claims of labour and capital as we might say—which are universally operative though seldom explicitly stated, and to explain their variations. A fundamental aim must be distinguished from the proximate ends which are adopted in consequence of its existence.

In the course of my investigations I have been impressed with the close dependence of the forms of distribution on the forms of production. Industrial conflicts have been caused by attempts to enforce old distributive arrangements after they have been rendered inappropriate by changes in productive forms. The problem of distribution ought to be studied not only as a whole in general, but also in connection with typical industries in particular, for the forms of production are not the same throughout the industrial world and they change at different times. The so-called 'labour problem' is complex, like the conditions of industrial life which give rise to it, and its variations are at least as numerous as the types of

organised industry. Its solution is complex, varied and progressive. General statements much the same in character might be made as to the most suitable form of production. The right form is multiform. Private management, joint-stock companies, large and small, labour co-partnership, cooperation, regulated monopolies, to mention only some general forms, have each their respective spheres of operation in an industrial world which was by no means simple in the days of our great-grandparents, and which with the rapid progress of the nineteenth century has become much more complicated. There is another interesting case of dependence of one form upon another to which the reader's attention might be specially directed, namely, the mutual determination exercised between the state of industrial organisation and the conditions of marketing.

My obligations are numerous. Many workers in the Cotton industry—employers, operatives, officials of trade unions and employers' associations, and others connected with the trades in cotton, yarn and cloth—have kindly provided me with information, and I have been privileged to visit numerous mills and weaving-sheds. More than once Professor Marshall has aided me with counsel and criticism. Portions of the work have been read by Dr. Cannan, Mr. Elijah Helm and Mr. H. Verney, and I have profited from their suggestions. Mr. W. G. S. Adams has been good enough to read for me almost the whole of the proofs. Miss M. Vernon gave me some help in preparing the manuscript for press, and my wife has worked with me in revising the manuscript, preparing tables, correcting proofs, and in all that is involved in bringing out a book. To all who have thus assisted me I hereby offer my hearty thanks, and I have

also to express my acknowledgements to the Editors of the *Economic Journal* and the Council of the Manchester Statistical Society for permission to re-print papers which have appeared in that journal and in the transactions of that society.

The researches of which this essay is the result were begun six years ago when I was elected to the Jevons Research Studentship at the Owens College, and two years later my work in an unfinished form was awarded the Adam Smith Prize in the University of Cambridge.

S. J. CHAPMAN.

MANCHESTER,
September 1904

ANALYTICAL TABLE OF CONTENTS.

CHAPTER I.

Early Forms.

PAGE

Establishment of the Cotton Industry in Lancashire and the early trades of Manchester 1
Early form of the industry 3
Conduct of foreign trade 5
Manchester merchants and other dealers 6
Various classes of weavers 9
The process of manufacture 12
General lines of development... 14

CHAPTER II.

The Coming of the Factory System in Weaving.

Two factory systems 18
Development of machinery 18
Hand-loom sheds 23
Increase of small masters 24
Changes in the form of the industry 26
The coming of the power-loom 27
Subsidiary inventions 30
Recent inventions related to weaving 32

CHAPTER III.

The Hand-Loom Weavers.

Conditions in the Eighteenth Century 36
Early decline in the prices for coarse weaving 39
Condition of the distressed weavers... 40
General decline in earnings 43
Town and country weavers 44
Causes of the distress of the hand-loom weavers 45
Weavers on 'steam-looms' 48
Note on legislation affecting the British Cotton Industry 49

CHAPTER IV.

The Coming of the Factory System in Spinning.

Two industrial revolutions in spinning 53
Development of machinery 53
The introduction of the water-frame and the water-frame mills ... 55
Jennies and mules and the factories in which they are used 58
Internal arrangements of an early factory... 61
Payment for 'turning' and spinning on commission 62
Exportation of yarns 65
Mule-spinning before the invention of the self-actor mule 68
Coming of the self-actor mule 69
Throstle- and ring-spinning 70
Development of machinery for processes preparatory to spinning ... 71

CHAPTER V.

The Attitude towards Machinery.

PAGE
Effect of the new machinery on the spinners 74
Different attitudes towards machinery 75
Machine-wrecking 76
The 'Long-wheel' strikes 78
Reasons for the opposition to machinery 81

CHAPTER VI.

Factory Legislation.

The treatment of children employed in the cotton industry 85
Insanitary conditions 89
Factory legislation relating to the hours of work and the exclusion of young children 90
Attitude of the cotton operatives to Factory legislation and the grounds for their attitude 97
Effect of the Factory Acts on the cost of production and wages ... 105
Legislation to diminish the dangers arising from the use of machinery 107
Sanitation and conditions of health 109
The form of State interferences—Statutory provision and Order ... 110
Table of operatives employed in cotton factories in the United Kingdom at different times and percentages of each class ... 112

CHAPTER VII.

Development in Marketing.

The Cotton Market in early days, its location and character... ... 113
Effects of the Manchester and Liverpool Railway and of the Manchester Ship Canal 114
Brokers 115
Conditions of market development... 118
Effect of telegraphic connection with America 123
Futures, options and straddles 126
The Cotton Clearing House and the Cotton Bank 131
Yarn and cloth markets 133
The conduct of foreign trade 138
Appendix I.—Statistics as to imports of cotton and exports of cotton goods in general 143
Appendix II.—Market quotations of 'futures' in cotton, 'spot' cotton, yarns and cloth 144

CHAPTER VIII.

Localisation, Industrial Specialism and Modern Problems of Organisation.

Localisation of the Cotton Industry in Lancashire—its causes and effects 148
Specialism, the localisation of sections of the industry and the characteristics of different places 156
Differentiation of the industry and the arrangement of its parts ... 161
Conditions of the growth of businesses 167
Types of industrial management—joint-stock enterprise and combinations 171
Table shewing the distribution of labour between spinning, weaving and other processes 179

CHAPTER IX.

Trade Unions and Employees' Associations, Early Days and the Transition Period.

PAGE
Early combinations among the weavers and their connection with schemes for friendly benefit 180
The movement for steadying prices (appeals to the Government, the great strike of 1812, and the position of the masters) 184
Apprenticeship regulations 190
The first combinations among the spinners and the violence in early days 193
Amalgamations among the spinners and general trades' unions ... 201
Masters Associations and the development of 'tactics' 206
The old and the new spirit (the attitude of trade unions to women workers and emigration) 212
New conceptions of the relation of employed to employers and the conditions of the time ('fining' and 'truck') 216
The trade-union movement becomes a 'labour' movement, a social movement, and a political movement (Owenism, Chartism, and Co-operation) 222

CHAPTER X.

Trade Unions and Employers' Associations, Recent Developments.

General developments since 1850 232
Developments among the spinners (Bolton and Oldham Provinces, United Movable Committee, Amalgamations and Federations) 233
Masters' Associations 239
Constitution of trade unions 241
Fundamental claims of the Cotton operatives 249
Policies adopted by trade unions and responses of employers ... 256

CHAPTER XI.

Methods of Paying Wages.

Early methods 262
Appearance of the 'Lists' 263
Changes in respect of the weaving lists in use 265
Changes in respect of the spinning lists in use 266
Differences in structure in the case of spinning lists (analysis of Oldham and Bolton lists) and methods of applying the lists ... 268
Payment of operatives other than spinners and weavers 272
Sliding-scales and sliding arrangements between different districts... 274

BIBLIOGRAPHY.

Annotated select list of authorities bearing upon the Cotton Industry in early years... 277

Index 305

The Lancashire Cotton Industry

Lancashire Cotton Industry.

CHAPTER I.

Early Forms.

It has generally been supposed that the cotton industry was established in Lancashire by the refugees who were driven to this country from the Spanish Netherlands during the troubles and persecutions of the second half of the sixteenth century, and certainly Flemish weavers did settle at that time in and about Manchester, but no decisive proof has been forthcoming that the cotton industry here was originated by them. Once the industry had started in Lancashire, however, there were special reasons for it to develop rapidly. In the first place, an organisation existed for providing material and disposing of the finished product in the arrangements by which the ancient trade of Lancashire in linens and woollens had been carried on. In the second place, the new art was no doubt free, to a great extent, from the restrictions which limited the long-established trades; and Manchester, being only a market town governed by constables, was not under the dominion of the regulations, common in corporations, by which freemen were favoured to the detriment of strangers. Moreover, the wardens and fellows of the Manchester College, according to Baines,[1] wisely encouraged the settlement of foreign clothiers in the town, by granting them permission to cut firing and timber for their looms from the woods of the college for the small annual payment of fourpence. In view of such facts, it is not astonishing that the cotton industry, even if it were not founded until the end of the sixteenth century, was by 1641 so firmly established as to be

1. *History of the Cotton Manufacture*, p. 99.

mentioned by Lewes Roberts in his *Treasure of Traffic* as that for which the people of Manchester should be "remembered, and worthily and for their industry commended," together with the manufacture, for the Irish, of linen out of Irish yarn.[1]

About the year 1650 the trade of Manchester is said to have consisted chiefly in "woollen frizes, fustians, sackcloths, mingled stuffs, caps, inkles, tapes, points, etc.,"[2] but early in the eighteenth century at latest the production of cotton goods began to usurp the first place. Daniel Defoe in 1727 observed that "the grand manufacture which has so much raised this town is that of cotton in all its varieties,"[3] and by "cotton" he meant, in this case, cotton proper,[4] and not those coarse woollens which, under the name of "cottons,"[5] had won for themselves a reputation many years before. Yet the woollen industry continued to be of importance—about 1750 Postlethwaite ascribed the fatness of the eels in the Irk to the grease and oils from the woollen cloths milled in it[6]—and it was not until the period 1770—1788, according to Radcliffe, that "cotton, cotton, cotton, was become the almost universal material for employment."[7] Radcliffe's statement is corroborated by Edwin Butterworth, who recorded that about 1780 many woollen weavers migrated from Oldham and its vicinity to Bradford, in Wiltshire, because the industry with which they were connected had been driven almost entirely away from the former district by

1. Original Edition, pp. 32, 33.

2. *A description of the towns of Manchester and Salford*, 1650 (quoted from Aikin, p. 154). See also Fuller's *Worthies of England* (published in 1662), vol. i. pp. 537-8, Ed. 1811.

3. *Tour*, vol. iii. p. 219 (quoted from Baines, p. 107).

4. *Ibid.*, vol. iii. p. 221.

5. The term "cottons" was in all probability applied to these goods because they were made to imitate or rival foreign cotton fustians and heavy goods.

6. *Dictionary of Trade and Commerce*, vol. ii. p. 10.

7. *Origin of the new system of manufacturing*, by William Radcliffe, 1827, p. 61. The cotton wool annually imported up to 1767 was not more than 200,000 lbs. on an average. The annual average amounts afterwards were as follows: from 1771 to 1776, 4,414,000 lbs. from 1781 to 1787, 16,232,000 lbs.; and from 1788 to 1792, 28,832,000 lbs.

the spread of the cotton manufacture.[1] When Defoe made his tour (1727), the town of Bury lay just beyond the boundaries of the cotton country, and was devoted chiefly to the manufacture of coarse woollens.[2] By 1774 as many as 30,000 people about Manchester were engaged in the cotton manufacture.[3]

It would be a mistake to suppose that in the conduct of the cotton trade in early days any one simple method of dividing work and responsibility was pursued. The various arrangements that were adopted we shall consider now in some detail together with the first changes that took place and the causes that led to the changes. Divers systems we should naturally expect to find, for they existed side by side in the woollen and linen trades both about the time when the cotton industry was brought to Lancashire and afterwards. In the woollen and linen trades there were weavers who were engaged to make up in their own homes materials supplied by the undertakers; there were self-employed weavers using their own materials, which might have been bought on a system of long credit;[4] and there were journeymen working for men

1. *History of Oldham*, p. 126.

2. *Tour*, vol. iii. Part I. p. 221.

3. Bryan Edwards' *History, Civil and Commercial, of the British Colonies in the West Indies*, 4th Ed., 1807, vol. i. Bk. II., ch. 5. In 1766 a law had been passed known as the "free port law" throwing open to foreign vessels the ports of Jamaica and Dominica. This law would have expired in 1774 but when evidence was given that cotton had been purchased in consequence through Jamaica at least 30 per cent cheaper than that obtained through France, and further that 30,000 people about Manchester were engaged in the manufacture of cotton, the Government decided to renew the Act, and it was afterwards made perpetual.

4. The statute 33 Henry VIII. c. 15, for removing from Manchester the privilege of sanctuary reads: "Whereas, the saide towne of Manchester is and hath of long tyme been a towne well inhabited, and the King's subjectes inhabitanntes of the saide towne are well set a worke in makinge of clothes, as well of lynnen as of woollen, whereby the inhabitanntes of the saide towne haue obteyned gotten and come unto riches and welthy lyuings and haue kepte and set manye artificers and poore folkes to worke within the said towne, and by reason of the great occupienge good order strayte and true dealing of the inhabitantes of the said towne, many strangers, as wel of Ireland as of other places within this realme, haue resorted to the saide towne with lynnen yarne, woolles, and other necessary wares for makinge of clothes, to be solde there, and haue used to credit & truste the poore inhabitantes of the same towne, which were not able and had not redy money to paye in hande for the saide yarnes wolles and wares vnto such time the saide credites with their industry labour and peynes myght make clothes of the said wolles yarns and other necessary wares, and solde the same, to contente and paye their creditours, wherein hath consisted much of the common welth of the said towne, and many poore folkes had lyuynge, and children and seruants there vertuously brought up in honest and true labour out of all ydleness." (Quoted from Baines, p. 92.)

like Martin Brian (or Byrom) of Manchester, one of the three famous clothiers of the "North Country," who about the year 1520 kept "a greate number of servants at worke, Spinners, Carders, Weavers, Fullers, Dyers and Shearmen, etc., to the great admiration of all that came into their houses to beehould them."[1]

In the cotton trade, on the commercial side, the most prominent functionary was the Manchester merchant. Local dealers in addition were to be found in the villages of Lancashire; but the bulk of the trade, we should conjecture, was conducted directly or indirectly through Manchester. It was customary for the merchants to obtain cloth from the weavers in the grey and then arrange on their own account for its dyeing and finishing to suit the needs of their customers. Customers were approached in a variety of ways. Much business was done with export houses or wholesale haberdashers in London, Bristol, Liverpool, Hull, Norwich and Newcastle; but sometimes these merchant houses bought direct from the local markets in Lancashire, for instance, that at Bolton, and so saved the cost of the Manchester middleman. Many merchants carried their goods to the fairs or hawked them about the country on pack-horses from shopkeeper to shopkeeper, and stored what was not immediately sold in the village inns. When trade expanded the Manchester merchants kept gangs of pack-horses. On their return journeys they carried sheep's wool which had been collected from the countryside for the use of the manufacturers of worsted yarn at Manchester or the clothiers of Rochdale, Saddleworth or the West Riding. After the much-needed improvement in roads, waggons took the place of pack-horses, and to push trade more vigorously "riders out" with patterns only were sent throughout the

1. *Mancuniensis*, p. 28 (Ed. of 1839). Hollingworth died in 1656.

country. In this way the Manchester trade was greatly extended in the period 1730—70.[1]

Aiken quotes the following communication from "an accurate and well-informed inquirer" (probably James Ogden),[2] but no authorities are given for his statement. "The trade of Manchester may be divided into four periods. The first is that, when the manufacturers worked hard merely for a livelihood, without having accumulated any capital. The second is that, when they had begun to acquire little fortunes, but worked as hard, and lived in as plain a manner as before, increasing their fortunes as well by economy as by moderate gains. The third is that, when luxury began to appear, and trade was pushed by sending out riders for orders to every market town in the kingdom. The fourth is the period in which expense and luxury had made a great progress, and was supported by a trade extended by means of riders and factors through every part of Europe."[3] The second period, "the accurate and well-informed inquirer" thought, began about 1690, the third about 1730 and the fourth about 1770. From about 1770, Aiken added, trade began to be pushed in foreign parts; Manchester manufacturers travelled abroad and many houses maintained agents or partners who resided continuously on the Continent.[4]

It was not the business men of Manchester, however, who founded the foreign trade in English cottons, although they began the trade direct from Manchester. In the first half of the seventeenth century "Fustians, Vermillions, Dymities and other such Stuffes" (all made of cotton) were sent from Manchester to London, "where the same" were "vented and sold, and not seldom sent

1. On all the above see Aikin, pp. 182-4. "Riders out" are referred to in *Letters on the dispute between the check-makers and their weavers, 1759.*
2. See Bibliography.
3. pp. 181-2.
4. p. 184.

into forrain parts."[1] Later there was a marked tendency for foreigners to settle in Manchester and thence direct the export trade to the countries from which they had come and to other markets with which they were acquainted. At first the settlement of these foreign merchants in Manchester was viewed by many with jealousy; but to the efficiency of the early shippers of Manchester the rapid extension of our cotton industry must be attributed. The causes of foreign distributors pushing their base as far back as Lancashire were as follows: the growth of the cotton trade which enabled merchants to specialise and sell cotton goods only; the pre-eminence of Lancashire manufacturing; the greater ease with which distribution abroad could be directed by people intimate with one foreign market at least and somewhat acquainted with others; the saving effected by cutting out a link from the chain of intermediaries that lay between the producer and the user of the goods; and the enterprise and adaptability of foreign merchants. The alien immigrant may add to the wealth of the country of his adoption not only by bringing with him a new trade but also through serving as a connection with a new market.

In early days, no doubt, many of the Manchester merchants manufactured for themselves with the assistance of journeymen. They also took apprentices; an indenture of 1659 mentions a premium of £60 and seven years' service. In the reign of George I. even country gentlemen began to bind their sons to the Manchester trade, sometimes after first sending them for two or three years to a weaver to receive technical instruction, and as the business had improved greatly premiums rose to £250

1. Lewes Roberts, *The Treasure of Traffic*, Original Edition (1641), pp. 32-3. See also Stukeley's *Itinerarium Curiosum* (1724), p. 55; and Ogden, p. 79.

and £300 and even higher. Country gentlemen were still placing their sons in the Manchester trade in 1800, when the common premium was £500, according to Radcliffe, and three or four apprentices would be taken by each firm of repute.[1] After the plan of the merchants giving out warps to the weavers had been generally adopted the merchants dwelt in houses "of four or five or six rooms of a floor, with warehouses under, and warping rooms over."[2] Previously they had lived in an humbler fashion, but improvements began to be noticeable in their dwellings by the beginning of the eighteenth century.[3] In 1795 a correspondent of Arthur Young wrote that about 1710 "the Manchester trade had long flourished so much that the master-manufacturers, instead of their old wooden dwellings, composed of raddlings and daub, had begun to build handsome brick houses, with palisadoes, pillars and other decorations."[4] Aikin has some further information of interest to give about the Manchester merchants or manufacturers of the period when a modest magnificence was becoming generally attainable. From a manufacturer's private expense book he quotes entries, under dates from 1700 to 1702, to show that the writer had a warehouse in London, that he paid £40 a year rent for his house (possibly with a warehouse attached), that he lived a life of some elegance and that he could afford journeys by private coach.[5]

The Manchester merchants, of credit and renown even in the seventeenth century, were not, as we have already noticed, the only middlemen in the trade, although unquestionably the largest and wealthiest dealers were to

1. On all the above see Aikin, pp. 181-4 ; Radcliffe, pp. 107-8 *note*.
2. *Letters on the dispute between the Manchester check-makers and their weavers*, 1759.
3. Aikin, p. 182.
4. *Annals of Agriculture*, xxv., pp. 299—300.
5. Aikin, pp. 185-6.

be met with in their ranks. Early in the sixteenth century Bolton was a market town of repute,[1] and in the middle of the eighteenth century it was one of the principal marts of the cotton trade, where the weavers of the district offered their goods to the merchants. French's description of Bolton in 1753, for which, however, he gives no authority, is too interesting to be omitted. "The neighbourhood of the town," he says, "was thickly studded with groups of cottages, in hamlets or folds as they are there called, many of which have since been surrounded by new houses, and now form part of the town itself. There were no tall chimneys in Bolton in those days, but many considerable warehouses to contain the heavy fustians and other piece goods made in the neighbourhood. . . . A weekly market was then, as now, held on the Monday, at which a large amount of business was transacted with merchants from London and Manchester, who frequented it to purchase the heavy fabrics for which Bolton was then the principal mart."[2] To this market came also merchants from Ireland selling linen for warps,[3] for at that time the bulk of our linen yarn was obtained from Ireland and Germany.[4] At Oldham also, about the beginning of the eighteenth century, there resided many small dealers, who traded in the cotton and woollen goods manufactured in the district, and were known as "chapmen," a term which seems to have been used then of merchants whose business was not extensive.[5] One would judge from Butterworth's account of the parish of Oldham that specialisation in the cotton-linen manufacture had become pronounced in the first half of the eighteenth

1. Quotation from Leland in Baines, p. 91.
2. *Life of Crompton*, p. 4.
3. *Ibid.*, p. 4.
4. *Letters on the Utility of Machines*, 1780, p. 15.
5. Butterworth, *History of Oldham*, p. 95.

century, for at that time numbers of "master manufacturers" described themselves as of the cotton-linen trade.[1]

In the Lancashire cotton industry in its earliest form no rigid line of demarcation could be drawn between the various grades of workers. It may be inferred from the facts before us that there were large dealers who did not engage in manufacturing, while at the same time there were manufacturers who dealt in the goods of others as well as in their own. There were weavers on their own account, employing nobody and selling to the local dealers or the Manchester merchants; there were also journeymen working for master weavers. It was with one of the well-to-do weavers that John Bright's father began his business life. "About the time when the cotton trade was, as it were, in its infancy in this country, he was apprenticed to a most worthy man who had a few acres of ground, a very small farm, and three or four looms in his house. . . . About the year 1796 he was free of his apprenticeship. . . . He found employment at his business as a weaver, and he was able to earn 6s. a week."[2] The state of affairs in the country, described in the above passage, was much the same as that observed by Defoe in the woollen district between Blackstone Edge and Halifax some three-quarters of a century before.[3]

The association of small farming with manufacturing was common. Radcliffe, writing of the industrial conditions in 1770, says that the "land in our township (Mellor) was occupied by between 50 and 60 farmers . . . and out of these 50 or 60 farmers there were only 6 or 7 who raised their rents directly from the produce of their farms; all the rest got their rent partly in some branch of trade,

1. p. 101. Butterworth gives a list of the chief manufacturers.

2. From a speech of John Bright's reported in the *Beehive*, Feb. 2nd, 1867 (Quoted from Webb MSS., Textiles).

3. *Tour* (1727), vol. iii. Part I. pp. 97—101.

such as spinning and weaving woollen, linen or cotton. The cottagers were employed entirely in this matter, except for a few weeks in the harvest."[1] At the time when Radcliffe wrote, and before, there were many small farmer weavers, many weavers whose farms were more of the nature of allotments, and others who hired themselves out as journeymen or harvested as occasion arose,[2] while in addition there were numbers of men who did nothing but cast the shuttle. From Radcliffe's time onward the last-mentioned class was increasing at the expense of the former, for reasons which are not far to seek. Outdoor employment by roughening the hands of the weavers reduced their skill; considerable waste was involved in allowing an expensive machine to stand idle; and an awakening and diffused spirit of enterprise brought about the invention of more complex appliances and the need of specialism on the part of the workers. Further, an enlarged demand for weavers followed the introduction of the jenny and the expansion of trade under the indefatigable marketing of the Manchester merchants; while a depression in small farming, accompanied by a displacement of much casual farm labour, as a result of such improvements as steam threshing, appeared simultaneously. Lastly, when some kinds of looms became so complicated as to need for their construction or repair the labour of the smith or of trained mechanics, many weavers found themselves almost compelled to leave the countryside for the large villages and towns.[3]

The evidence for the early association of agricultural occupations and weaving is overwhelming, though no doubt it is the former and not the latter which should be

1. p. 59.

2. Rules of the small-ware weavers. Tramping weavers, mostly Irish, were common later.

3. John Kennedy, *Rise and Progress of the Cotton Trade.* Even to the last some weavers would make the whole of their looms except the reeds, healds and shuttle.

regarded as the by-employment in most cases. Such association we should naturally expect to find, for, according to Defoe, it was common among the clothiers engaged in the woollen industry. Edwin Butterworth, a most painstaking investigator and full of information as to eighteenth century customs in Lancashire, in speaking of the cotton-linen fustian manufacture, asserted that in the parish of Oldham were "a number of master manufacturers, as well as many weavers who worked for manufacturers, and at the same time were holders of land or farmers." "The number of fustian farmers," he said, "who were cottagers working for manufacturers, without holding land, were few; but there were a considerable number of weavers who worked on their own account, and held at the same time small pieces of land."[1] Even at the end of the first quarter of the nineteenth century the connection between the occupations of agriculture and weaving was still common. The Committee on Emigration of 1826–7 reported that in many districts, "and more especially in Lancashire, there appear to be among the hand-loom weavers two classes almost wholly distinct from each other; the one, who, though they take in work in their own houses or cellars, are congregated in the large manufacturing towns; and the other, scattered in small hamlets or single houses, in various directions throughout the manufacturing county. . . . It appears that persons of this description, for many years past, have been occupiers of small farms of a few acres, which they have held at high rents; and combining the business of a hand-loom weaver with that of a working farmer, have assisted to raise the rent of their land from the profits of their loom."[2] There is no reason to suppose that the

1. *History of Oldham*, p. 101. On this custom see also French's *Life of Crompton* pp. 4, 5, and 9.

2. Reports, etc., 1826-7, v. p. 5. Statements of the existence of this state of affairs can be found in Parliamentary papers, *e.g.*, Gardner's evidence given before the Committee on Hand-Loom Weavers in 1835.

description in this passage of the source of the rents paid for small holdings is incorrect. A landowner would require a higher rent per acre for land divided up into small parcels than for that let in large farms, because of the greater trouble involved in managing the former; and probably no man who farmed only a few acres could have made enough for his subsistence and for this rent from his farm alone.

Many hand-loom weavers in the eighteenth century were independent men of business. They worked for local dealers, or dealt with private families,[1] or sold their cloth on market days in the markets of the district. Many journeyed to Manchester with their cloth, and such of them as worked on their own account bought there cotton and linen for warps.[2] Spinning and the preliminary processes of cleaning, carding and roving, were conducted in early times by the women and children in most families of the hand-working classes in Lancashire; and as the spinners in country parts assisted to gather in the harvest it was not easy at all times to procure a sufficiency of yarn, whether of wool, linen or cotton. For this reason the Society of Arts offered prizes in 1761 for the best machines capable of spinning six threads at once.[3]

Let us now examine briefly the actual process of manufacture in its simplest form. The linen yarn for the longitudinal threads of the cloth was warped by the weaver himself on pegs fixed in a wall.[4] The cotton wool was cleaned, carded and spun, at home by women and children; although roughly "ginned" before being

1. Known as "Customer Weavers" in Scotland. They were for the most part agricultural labourers. (Reports, etc., 1839, xlii. p. 519.)
2. On the above see Butterworth, *History of Oldham*, p. 101; and French, *Life of Crompton*, pp. 4, 5.
3. Printed minutes of Society of Arts, 1762-3, p. 112 (quoted from French's *Life of Crompton*, pp. 92-3, 3rd Ed.). A prize was awarded to George Buckley. French conjectures that Lewis Paul did not claim the reward because his machine did not spin many threads at one time (pp. 146-7 *note*, 1st Edition).
4. Guest, p. 7. An illustration of peg-warping is given (Plate 2).

sent to this country, it had to undergo here an additional cleaning. For ordinary purposes the complete cleaning process consisted merely in the beating of the cotton with willow switches after it had been laid out on a tight hammock of cords—hence the term "willowing." For fine spinning the cotton was in addition carefully washed; and, if not washed in other cases, it appears to have been drenched and partially dried to make the fibres cling.[1] French quotes a vivid description of the operation of washing the wool by George, the eldest son of Samuel Crompton, who was born on January 8th, 1781. "I recollect," he wrote, "that soon after I was able to walk I was employed in the cotton manufacture. My mother used to bat the cotton wool in a wire riddle. It was then put into a deep brown mug with a strong ley of soap and suds. My mother then tucked up my petticoats about my waist, and put me into the tub to tread upon the cotton at the bottom. When a second riddleful was batted I was lifted out, it was placed in the mug, and I again trod it down. This process was continued till the mug became so full that I could no longer safely stand in it, when a chair was placed beside it, and I held on by the back. When the mug was quite full the soapsuds were poured off, and each separate dollop (*i.e.*, lump) of wool well squeezed to free it from moisture. They were then placed on the bread-rack under the beams of the kitchen loft to dry. My mother and my grandmother carded the cotton wool by hand, taking one of the dollops at a time, on the simple hand cards. When carded they were put aside in separate parcels ready for spinning."[2] The drying of the cotton sometimes gave rise to accidents.

1. Mr. Andrew's notes to Rowbottom's diary.

2. *Life of Crompton*, pp. 58-9, 3rd Edition. This careful washing and hand-carding after the invention of cylinder carding was no doubt necessary because Crompton's speciality was very fine yarn.

Rowbottom on March 6th, 1788, entered in his diary an account of a fire which had been caused in a neighbour's cottage by his wife imprudently holding a candle under the cotton to hasten its drying. Again on January 14th, 1791, he noticed another accident of the same character. The carding at first consisted in raking the fibres parallel with hand-cards, which were brushes with wire handles;[1] and in weaving the shuttle was originally cast from hand to hand. The early looms were frequently constructed in whole or in large part by the weavers themselves.

Such was the Lancashire cotton industry in its infancy. Its lines of development are roughly of two kinds, industrial and commercial. Businesses, labour and machinery have all specialised, and in most cases specialisation has been conditioned by commercial developments. The parts into which the industry has divided have localised separately, under the influence of their several climatic and other requirements, and formed groups with the parts of other industries and other parts of the same industry. The first change was the increasing dependence of the weavers upon the merchants. The system under which some of the former had bought warps and cotton in the open market gave place generally to an arrangement by which they received materials instead from the merchant and were paid no longer for their own goods, which they had made themselves out of their own materials, but for the operations of making them, that is for carding, roving, spinning and weaving. Guest says that the change took place about 1740,[2] but as Aikin[3] refers to the use of warping mills in the seventeenth century it would be a mistake to attach

1. An account of development in the process of carding will be found at the end of chapter iv.

2. p. 8.

3. pp. 182-3.

much importance to the date mentioned by Guest. And it will not be supposed, of course, after what has been already said, that any one uniform system preceded this change; at most it was such a change as could be observed only in the general character of the industry. All that we can assert with confidence is that somewhere about the beginning of the eighteenth century a strong centralising tendency revealed itself and that it was assisted by the economies associated with centralised warping after the invention of the warping-mill. It did not pay the individual weaver to keep a warping-mill for occasional use only, and frequently the contracted space of his workroom precluded even the possibility of his doing so. The invention of the warping-mill necessitated specialism in warping, and it was essential that warping should be done to order, since at that time, the state of the industrial world being what it was, no person could ordinarily have been found to adventure capital in producing warps ready-made in anticipation of demand for the great variety of fabrics which was even then produced. Moreover, had the weaver himself placed the orders for his warps, any occasional delay in the execution of his commissions might have stopped his work entirely until the warps were ready; for warps cannot be delivered partially, like weft, in quantities sufficient for each day's work. To ensure continuous working in the industry, therefore, it was almost inevitable that the merchant should himself prepare the warps for such fabrics as he required, or possibly have them prepared. To the system of the merchant delegating the preparation of warps there was less objection than to the system of the weaver doing so, since the merchant dealing in large quantities was more likely to get pressing orders completed to time. Further the merchant knew

first what kind of warps would be needed. The first solution, however, that of the merchant undertaking the warping himself, was the surer, and there was no doubt as to its being the one destined for selection in a period when a tendency to centralise organisation, responsibility and all that could be easily centralised, was steadily gaining in strength.

When the new organisation had become comparatively usual the merchants began to employ persons on commission in the various villages to put out material.[1] Shortly after (about the middle of the eighteenth century) this step in the direction of the capitalistic organisation of industry is said by Aikin to have given rise to the appearance of a new class of men, the fustian masters, or, more generally, piece-masters, who resided on the spot among the weavers whom they employed. Local dealers, however, existed before 1750; and after 1750, although it was usual for the country weaver to do business directly with a local master, who filled the office of middleman between the craftsman and the large Manchester merchants, many of the latter conducted their transactions with the weavers through agents. According to Aikin,[2] before it became the rule for the dealer to give out warps, he had begun to provide the weaver with weft in cops; but, as our authority says, "the custom grew into disuse, as there was no detecting the knavery of spinners till a piece came in woven." Bad work might have been attributable to defects in weaving, cleaning, carding or spinning; and as the yarn could not be completely unwound and tested, the best results were obtained by saddling the weaver with responsibility for all the operations. However, inasmuch as machine-carding

1. Aikin, p. 158.
2. p. 167.

and machine-spinning introduced greater uniformity among yarns purporting to be the same, in course of time the provision of weft by the master was again resorted to, and it soon became the universal custom since the undertaker thereby acquired a more perfect control over the quality of his goods.

CHAPTER II.

The Coming of the Factory System in Weaving.

In weaving two factory systems are to be distinguished. The one was caused by the need of water or steam for driving heavy machinery. The other was caused by the increasing complexity of machinery, which magnified its cost and threw the operative into a state of dependence on some wealthier person for its provision; and by the increasing complexity of business (the outcome on the one side of constant additions being made to the variety of cotton goods and the rapid changes that took place in patterns), which augmented greatly the economies to be derived from a thorough-going organisation. With the latter of these factory systems we shall deal first, as, in its initial stages, it preceded the former and to some extent prepared the way for it.

John Kay's invention of the fly-shuttle in 1738 began the modern development of looms.[1] According to the old-fashioned method of weaving the operative threw the shuttle between the warps from hand to hand

1. More than half a century before the invention of the fly-shuttle a weaving machine, adapted for working by power, had been contrived by Monsieur de Gennes. A description of it, extracted from the *Journal de Scavans*, appeared in the Philosophical Transactions for July and August, 1678 (vols. 10, 11, and 12, pp. 1007-9). A shorter account based upon this, together with the illustrations accompanying it, appeared in the *Gentleman's Magazine* nearly three-quarters of a century later, namely, in 1751 (vol. 21, pp. 391-2). The idea involved was very primitive. It consisted in two metal arms alternately shooting through the warp, one from each side, and on each occasion exchanging the shuttle which fitted into the end of the arm. The arrangement for exchanging the shuttle was roughly as follows. There was a hole at the end of the arm and within the hole the shuttle was held by a catch or clasp; but when the arm was at full stretch (*i.e.*, when it was stretched enough to meet the other arm) the clasp was unfastened by a mechanical contrivance. The arm then drew back, leaving the shuttle clasped in the end of the other arm in the same way. The second arm then moved through the warp. I have found no further reference to this weaving-machine, and I can scarcely believe that it was ever used. Also in the seventeenth century a John Barkstead was granted a patent for a method of manufacturing cotton goods, but the method is not described (1691, specification 276).

along the grooved plane known as the lathe. In Kay's contrivance the shuttle was propelled by hammers placed at the ends of the lathe, which was lengthened for the purpose, and motion was given to the hammers by the weaver jerking a handle, known as the "picking-peg,"[1] to which they were attached by threads. As the result of this invention the operative was enabled not only to weave more rapidly but to make by himself without assistance the broader cloths, which had previously required two men for their production inasmuch as their width was greater than the stretch of a man's arms. The fly-shuttle, however, was not applied much in the cotton industry before 1760,[2] the year in which John Kay's son Robert invented the drop-box, by which the weaver could at will use shuttles containing different coloured threads without making the substitution of one shuttle for another directly by hand. The drop-box was, in fact, a partitioned lift, working at the end of the lathe, and so constructed that any partition could be raised or lowered to the same level as the lathe and thus made to form a part of it. When the fly-shuttle and the drop-box were attached, the loom became a somewhat complicated machine, and it was rendered the more complicated by the occasional use of a contrivance for raising and lowering different coloured warps.[3]

Long before 1760, a highly intricate machine known as the swivel-loom had been introduced for the weaving of many narrow pieces at once. In 1724 Stukeley in his *Itinerarium Curiosum* wrote of the people of Manchester that "they have looms that work 24 laces at a time, which

1. *i.e.*, throwing-peg.

2. Guest, p. 9. The statement is based on a manuscript lent to Guest by Samuel, the son of Robert Kay (Guest, p. 30).

3. The "Draw-boy," see p. 22.

was stolen from the Dutch."[1] These were the swivel-looms. Ogden agrees that the invention came to us from the Dutch, even if it did not originate in Holland. "It was found," he says, "that the Dutch enjoyed the manufacture of fine Holland tapes unrivalled; plans were therefore procured, and ingenious mechanics invited over to construct swivel engines at a great expense, but adapted to the light work for which they were first intended, on so true a principle that they have been employed in most branches of small-wares with success."[2] Ogden in this case was referring to events which presumably happened at least sixty years before he wrote, and he gave no authorities, but documentary evidence of an earlier date than Ogden's book can be found to support the conjectures that the idea of swivel-looms came to us from Holland and that they were largely employed even in the first half of the eighteenth century. As we have noticed above, Stukeley refers to looms of Dutch design being worked in Manchester for weaving 24 laces at once, and in their rules dated 1756 the Manchester small-ware weavers spoke of the masters having acquired by the use of "engine or Dutch looms" (unquestionably swivel-looms) "such large and opulent fortunes as hath enabled them to vie with some of the best gentlemen of the county," and declared that these machines, which wove twelve or fourteen pieces at once, had been in operation in Manchester "thirty years ago." Nothing but a simple circular motion was required to keep the swivel-looms at work; hence they became the first power-looms. In 1765,

1. In the Parliamentary Reports, 1840, xxiv. p. 611, we read that about the middle of the eighteenth century the swivel-loom was invented by Van Anson—by "Van Anson" is possibly meant Vaucanson, who appears to have improved the swivel-loom. Vaucanson, however, could not have been the original inventor, since in 1724 (that is, when Vaucanson was at most fifteen years of age) they were being used in Manchester.

2. Ogden, p. 82. From this account it is obvious that the swivel-looms belonged to the masters, at any rate at first. They must have hired them out to the weavers, or engaged weavers to work them in sheds under the control of their employers.

we are told, a Mr. Gartside, of Manchester, filled a factory with them and used water as the motive power; but he failed to make the enterprise succeed, since each loom, on account of its intricacies and imperfections, required the unremitting supervision of one skilled workman.[1]

An explanation of the mechanism of the swivel-loom, with numerous diagrams, will be found in the *Encyclopédie Méthodique*.[2] Its most significant feature was the dragging, or pushing, of the shuttles through the warp by the action of cog-wheels. Each shuttle had necessarily to be greater in length than the width of the ribbon which was being woven. A cog-wheel working on the teethed top of the shuttle set it moving through the warp, and when the nose of the shuttle appeared at the other side of the warp it was caught by a second stationary cog-wheel the revolution of which dragged it completely clear of the warp. Reversing the motion of the cog-wheels returned the shuttle after the several threads of the warp had been transposed, up and down, in the usual way. This cog-wheel arrangement was altogether unsuitable for the production of wider fabrics, since throwing a small shuttle occupied far less time than would have been required to grind a four-foot shuttle through a three-foot width of warp. The swivel-loom was economical for tapes and narrow tissues because a great number of pieces could be woven by it at once. Ultimately the principle of the fly-shuttle displaced that of cog-wheels on the ribbon-machines; hence the author of a *History of the Cotton Trade* (1823) in describing the ribbon-machine says "the shuttles are, of course, fly-shuttles." Indeed it was as easy to set in motion with the picking-peg twenty or more hammers as two. The hammers formed the vertical cross-

1. Aikin, p. 175-6; Guest, p. 44.

2. *Manufactures, Arts et Metiers*, Pt. I., vol. ii. pp. cciiccviii., and *Recueil de Planches*, vol. vi. (1786), pp. 72-8.

bars of a frame like a ladder, and known as "the ladder," which slid horizontally between two grooves.

We have referred above to an arrangement for raising warps in groups in such a way that figured goods could be produced. This was the "draw-boy" or "draught-boy," so called because a boy was usually engaged to work it. As early as 1687 an attempt was made to escape the expense of the assistant by the contrivance patented by one Joseph Mason,[1] but whether it worked satisfactorily, or was much used, cannot be said. In later years looms with draw-boys affixed, which in some cases could be controlled by the weavers themselves, became common. They were known as "harness looms," and Paisley alone contained 5,000 of them by the early "forties."[2] Almost all of those at Paisley were worked by assistants of ages varying from 6 to 18. The figured goods produced on harness-looms (which are now supplanted by Jacquard looms) were also known as "draw-boys," and they became so popular "that the utmost encouragement was given to ingenious weavers, and looms mounted for them at a great expense, which the employers advanced."[3] Many weavers, naturally, could neither set up their own draw-boy arrangements, nor afford to pay others to do so. Nor could they afford to provide all the needful appliances when it became necessary for each weaver to undertake many varieties of work and repeatedly re-adapt his loom by changing certain parts of it. Hence many masters undertook to provide reeds (which had to vary in fineness with the fineness of the warp), healds and other changeable parts of looms,[4] and sometimes to employ gaiters to put new work in the looms.

1. Specification 257.

2. Reports, etc., 1843, xiii. p. 347.

3. Ogden, p. 77. In 1839, of the 51,060 hand-loom weavers in Scotland south of the Forth and Clyde 11,560 were harness weavers (Reports, etc., 1839, xlii. p. 518). Figured goods were not for a long time taken over by power looms.

4. Reports, etc., 1802-3, viii., 991; 1808, ii. p. 109.

Ordinarily weavers gaited themselves and sometimes they employed gaiters.[1] Ultimately jacquard-looms took the place of harness-looms. The fundamental idea of the jacquard-loom is the same as that of some automatic musical instruments; by a system of perforated cards the power is directed to the warps that require raising from time to time. Recently a new idea of electrical indicators has been put forward.

Thus the development of mechanical appliances was by slow degrees creating conditions favourable to the capitalistic organisation of industry—conditions such as the existence of expensive machinery, the segregation of labour, and that specialisation which renders labour helpless unless organised in a system by which it is effectively combined with other productive factors.[2]

Some master weavers had of course employed journeymen from the earliest times; and therein lay the germs of a factory system. A hundred years ago the weaver owning from four to six looms, which he worked with the assistance of one or two apprentices and one, two or three journeymen, was common, and much larger establishments were not unusual. "In the latter part of the last and the beginning of the present century," says Butterworth, describing the state of affairs in Oldham and the neighbourhood, "a large number of weavers . . . possessed spacious loom shops, where they not only employed many

1. *e.g.*, Reports, etc., 1802-3, viii. pp. 949 and 952.

2. The following is a good example, taken from the Scottish Linen Trade, of the centralisation of industrial responsibility under the conditions of the domestic system. *The Gentleman's Magazine* in 1765, describing the formation of a colony of linen weavers at Farres in Scotland, said—"The undertaker Captain Urquahart, has marked out upon the "banks of a pleasant river, ground plots for building houses, and making gardens for all "linen weavers who shall offer, and gives three-pence a mile for travelling charges, to "bring the settlers to his new colony, builds each family a house at his own expense, and "furnishes a loom to be paid for in easy proportions" (vol. xxv. p. 533). From 1746 the linen trade in Scotland had been largely financed by the British Linen Company (Cunningham's *English Industry and Commerce*, p. 350). In the linen trade of Scotland a factory system had showed itself in the earliest times. In 1638 a Robert Fleyming and his partners, with the support of the Town Council of Glasgow, turned a great lodging in Drygate, which had once belonged to a prebendary of the cathedral, into a weaving-factory. (James Cleland, *Description of Glasgow*, 2nd Ed., 1840, pp. 37-8.)

journeymen weavers, but a considerable proportion of apprentice children." Many masters both put out warps and arranged for some weaving to be done on their own premises. William Radcliffe, whose work, *The New System of Manufacturing*, will be frequently quoted in these pages, carried on a business of this kind at Stockport. The different classes of weavers noticed above were known by distinct names. A man working on another weaver's loom was a "journeyman," and his master was a "master weaver;" the former received about two-thirds of the price paid to the latter by the manufacturer. A man working in a manufacturer's shed was known as a "factory-weaver" or "shop-weaver." While it would be a mistake to overlook this growing tendency for labour to be engaged on appliances possessed by the employer, it must nevertheless be remembered that to the very last the hand-loom weavers who were self-employed probably formed the majority. Most, the Commissioners reported in 1841, were neither journeymen nor factory weavers; but by that date, no doubt, many who had worked in hand-weaving sheds had drifted into the power-loom factories when the latter displaced the former. The figures given by the Assistant Commissioner for Scotland show that of the hand-loom weavers south of the Forth of Clyde only some 3,500 out of more than 51,000 did their work in factories.

At a time when old social attachments were rapidly dissolving under the influence of the new spirit of enterprise, and before much capital was needed by an employer, it is not astonishing that labour moved with no great difficulty from one grade to another. Operatives easily became masters, especially at a time, to be dealt with more in detail hereafter, when the craftsman's skill was highly remunerated. John Kingan told the Committee on Hand-loom Weavers of 1834 that he could name

forty or fifty people, then living, who from hand-loom weavers had become men of capital and position; that two of those whom he could call to mind had been Provosts of Glasgow.[1] William Radcliffe rose from the ranks and disclaimed any special merit for having done so, on the ground that "any young man who was industrious and careful might then from his earnings as a weaver lay by sufficient to set him up as a manufacturer." In fact so general was it for persons to pass from the one position to the other that the evils which befel the hand-loom weavers were partially attributed by some to the numbers who struggled into the position of small masters and then competed desperately with one another to maintain themselves with insufficient capital. "If a man," said Philip Halliwell to the Committee above referred to, "can purchase a winding machine and a warping mill and get credit for a skip of yarn, he can get into motion as a master. . . . When he has made his cloth he must sell it every week, the same as the weaver must do, or he cannot keep in motion. There is such an immense quantity of work done by men of this description, that I look upon them as hanging as a dead weight upon the whole trade." Many of these small masters would visit the Manchester Exchange three times a week offering goods and soliciting orders and prepared to accept any price rather than be left with a stock or without full work.[2] Another fact may be mentioned here which is equally illustrative of the dissolution of old customs. There was a time when the independent weaver naturally owned his loom; but at the beginning of the nineteenth century the hiring of looms from those who let lodgings, or others, became so usual as to excite no comment. An article in the rules of the

1. Monteith and Dalgleish.
2. Evidence of Geo. Smith to the Committee on Trade of 1833. See also Reports, etc., 1808, ii. pp. 102-3.

Associated Weavers of Scotland (1824) declares that when a journeyman leaves a district he must carry a certificate to his new district stating that he has paid all the demands of his old district and also charges for weft-winding and his loom-rent.

From the foregoing we may conclude that, apart from the conditions which the application of the powers of inanimate nature to machinery created, productive arrangements in the cotton-weaving industry were undergoing striking changes in the form of a further separation of "undertaking" from the actual operation of weaving, and a further centralisation of industrial control and the ownership of appliances. As to the causes in general we have already spoken, and of these one of the chief was an awakening, among certain classes, of economic activity and initiative. The new order in its most developed form meant the factory; and, as we have seen, the "shop-weaver" or "factory-weaver" on the hand-loom was by no means rare at the close of the eighteenth and the beginning of the nineteenth century. But the force of public opinion among the hand-loom weavers as a class was strongly in favour of the domestic system. They objected to fixed hours and anything of the nature of discipline, and the journeyman who worked with a master-weaver in his home enjoyed more freedom than those who joined the factories. The "factory weaver," if not exactly despised, was no doubt regarded as beneath the station of an independent weaver. So, probably, what a factory-master gained over a piece-master through the regularity of his men, and their moderately unbroken application during working hours, he sometimes lost again through not securing the best men, and through a feeling of inferiority and dependence in his workmen preventing them from rendering the best of which they

were capable. Such was the state of affairs, the advantages of factory and cottage as the seat of weaving being fairly balanced, the one proving superior for one class of labour in one range of goods, the other offering greater economies in the case of different qualities of labour or different goods, when the invention appeared, which, in combination with the supplementary contrivances naturally following it, ultimately drew the operatives entirely under the control of the factory-master.

In 1787 the Rev. Edmund Cartwright, brother of the well-known reformer Major Cartwright, solved the problem of so adding to the rapidity of weaving as to exhaust the increasing output of yarn—a problem the converse of that of earlier years, when improved spinning had been needful to relieve the pressure exerted by weavers on those who slowly drew weft from the one-spindle wheel. Ultimately Cartwright's power-loom became an irresistible competitor (although for many years certain fabrics could not be woven by it so well as by hand) for it not only worked faster than the hand-loom, the speed of which was limited by the rate of human movements and human endurance, but also produced a cloth of a more even texture, because of the uniform strength of the blows administered mechanically to the shuttle, a uniformity which no human agent could hope to rival. Indeed power-loom cloth became, in consequence of its evenness, so popular that fabrics made by hand were stamped "power-loom" by dishonest manufacturers.[1] Yet this great invention did not immediately create a revolution. Although the trial of the power-loom commercially began in England almost directly after Cartwright had taken out his last weaving patent in 1787, and although the first small attempts with the new

1. Radcliffe, *Origin of the New System in Manufacturing*, p. 54.

machine were being made in Glasgow in the last few years of the eighteenth century, only 2,400 were at work in the United Kingdom in 1813. By 1820 their numbers were about 14,000; and at that time there were supposed to be some 240,000 hand-looms, a number which increased rather than diminished between 1820 and 1830.[1] It appears to be beyond question that the competition of the power-loom was not very serious prior to 1812 at earliest and in many places not until considerably later. From much evidence given to the Committee and Commissioners on Hand-loom Weavers it would seem that power-looms and hand-looms had each their respective spheres of operation. For the Bolton goods of 1834 the former were not of much value; and in the whole of Bolton, while 7,000 to 8,000 hand-loom weavers carried on their trade, only 733 hands worked on 1,466 power-looms.[2] In Oldham the effect of the power-looms began to be felt in 1818 or 1820,[3] and in 1824 Rowbottom wrote in his diary:—"Factory work is best for a poor family at this time; weaving is very poor. . . . . A deal (of tabbies) is wove two in a breadth, and when wove the two pieces are cut up the middle and then the weaver has two pieces to carry home. There are some who weave three in a breadth." The expedient of weaving "splits" more extensively served its purpose only partially and for the shortest space of time: the next year Rowbottom wrote:—"Anything that

1. Reports, etc., 1830, x. pp. 223-4. The following figures shew the increase in the number of power-looms (see Reports, etc., 1840, xxiv. p. 611):—

	England.	Scotland.	Ireland.	Total.
1813	—	—	—	2,400 (Estimated)
1820	12,150	2,000	—	14,150
1829	45,500	10,000	—	55,500
1833	85,009	15,000	—	100,000
1835	97,564	17,721	1,516	116,801

In 1870 the total in the cotton industry was 440,676, and by 1890 it had grown to 615,714. See also the account of the growth in detail given by Baines, pp. 235-7.

2. Reports, etc., 1834, x., Q. 5627, 5058, 5728—30.

3. Annals of Oldham.

can be wove on power-looms is wove at factories, and to the manifest injury of the poor weaver." Yet hand-loom weaving was carried on to an appreciable extent, in some places and in the case of some goods, well into the second half of the nineteenth century. None the less the ultimate triumph of the power-loom was certain long before the "thirties," although at that time it was only just beginning to secure the finest and most delicate work, that is muslins, commonly known at the time as "the white work." After 1835 power-loom weaving increased rapidly; in 1845, on the 26th of November, Leonard Horner reported that in the previous ten years the number of power-looms in his district had more than doubled; in that year there were running in his district 142,950 power-looms, of which 138,720 were used in the cotton industry. Inasmuch as manufacturers had been fully convinced, before power-looms became at all common, that it was to their interest to adopt Watt's steam-engine wherever possible, almost all the first power-looms were driven by steam; hence "steam-looms," the name usually applied to them, and the class of "steam-weavers" who are to be distinguished from "factory-weavers" since the latter might be engaged on hand-looms.

From the foregoing it is evident that the Commissioners on Hand-loom Weavers were not committing themselves without good reasons when they made the statement that "mechanical improvements . . . such as the mule and the power-loom are of slow introduction."

At first sight it must excite surprise that the power-loom, invented in 1787, should still be fighting its way, even on such simple cloths as "tabbies," in the "twenties." The reasons were probably somewhat as follows. Operatives on new machines may be for a time worth less

than their wages, especially if the most capable hands cannot be secured for the new work and those who are obtained go about their business in a spirit of sullen discontent. Moreover new machinery is generally inefficient machinery, and the first power-looms were no exception to the rule. Cartwright sank a fortune in trying to make them pay; and probably the burning of the first power-loom shed at Manchester, that of Messrs. Grimshaw, was no great loss to its owners, since they were experimenting with the new machinery, at great cost and with little success, in the hopes of hitting upon improvements the need for which was only too apparent. The fundamental invention by Cartwright was followed by those of Bell and Miller in 1794 and 1798 respectively; yet a factory fitted up at Pollokshaws, Glasgow, with the latest improvements was financially a failure for many years.[1] Universal experience shows that inventions tend to be kept back by the trouble and risk involved in introducing them—and sometimes by establishing interests in existing patents[2]—and not unusually one invention depends for its success upon other inventions related to associated processes. The power-loom, for instance, at the beginning of the nineteenth century was not much more economical than the hand-loom for reasons of which the time lost in dressing the warp on the loom was by no means the least important; for this process, which had to be performed frequently, entailed a stoppage of the machinery. In 1803 and 1804, however, Radcliffe and his partner took out four patents for inventions, at which the former had arrived with the assistance of an ingenious mechanic named Thomas Johnson, and two of these pro-

1. Baines, p. 231.

2. See *e.g.* paper by Mr. G. O. Draper, of the Company which brought out the Northorp loom, in which it is stated that one ingenious device was kept back until certain patents expired (*Textile Recorder*, May 15th, 1900).

vided for the dressing of the warp before it was placed in the loom.[1] The other two patents related to a useful improvement in the loom whereby the cloth was taken up mechanically instead of being drawn forward at frequent intervals by hand. Machines fitted with the appliance for taking up the cloth came to be known as "dandy-looms,"[2] and they were extensively used. Yet Kennedy could write in 1819 in his paper on *The Rise and Progress of the Cotton Trade*,[3] "It is found . . . that one person cannot attend upon more than two power-looms, and it is still problematical whether this saving of labour counterbalances the expense of power and machinery, and the disadvantage of being obliged to keep an establishment of power-looms constantly at work." The common arrangement in some cases was still one girl to two looms in 1834,[4] but in other cases one adult and one child from 9 to 11 years of age were "tending" three or four.

Even when supplemented by the inventions of Radcliffe the power-loom was far from perfect. It did not cease working when the warp broke, or when the weft broke, and whenever a cop was used up a stoppage became necessary for fresh weft to be inserted in the shuttle. In course of time inventions appeared by which all these defects were largely remedied. Early in the history of the power-loom a contrivance was adopted by which the loom was thrown out of action on the snapping of the weft, and now in addition machinery may be automatically checked on the breakage of a warp thread.[5] The warp-stop motion usually employed, it is true, imposes some strain on the warp threads, since they have to bear the

1. Radcliffe, p. 24 *et passim*.
2. Reports, etc., 1834, x. Q. 5038.
3. *Proceedings of the Manchester Literary and Philosophical Society*, 1819.
4. Reports, etc., 1834, x. Q. 1951.
5. Cartwright shewed a warp-stop motion in his patent of 1786.

weight of the appendages by which the warps are connected with the check action; hence it has been needful in some cases to introduce stouter twist when this system is resorted to. However another idea has been put into practice lately by which the strain is appreciably reduced. The connection of the warp thread with the electrical arrangement for throwing the loom out of action is effected, not by a "faller" hanging on each thread, but by a wire which leans in the angle formed by the junction of two warps; if either of the warps break the wire drops and falling upon a receiver completes an electric circuit which achieves the rest. Nevertheless the first plan described above is the customary one at present. Again, the last few years have seen workable contrivances adopted for saving the time spent in feeding looms with new weft and threading the shuttle. Sometimes a new shuttle is made to take the place of the old one; sometimes the exhausted cop is ejected from the shuttle and a fresh one is introduced, the system in general being on the lines of that exemplified in the magazine rifle, and in this case the self-threading of the shuttle is essential; and sometimes the loom is fed without a stoppage being imposed upon the machinery, though in other cases a pause of a few moments takes place. Another invention of recent date prevents the cloth woven on automatic looms from being defaced by half picks; the new supply of weft is brought into operation before the old cop has been completely used up.

Certainly no problem in the cotton industry has been attacked more sagaciously of late years than that relating to mechanisms for weaving. But many of the recent inventions of automatic arrangements are still under trial, and successes have been achieved only in limited fields. In the United States, it is true, the automatic loom is already applied extensively, but in England it is making

its way far more slowly, and it is said to be more serviceable for the kind of cloth produced most largely in America than for the qualities upon which the English trade chiefly depends. It is too early yet to speak of the place which any of these new automatic schemes will occupy in the cotton industry, and it is not my purpose in this book to attempt an explanation of the divergent characters of the English and American cotton industries to-day.[1]

Before we dismiss entirely the subject of weaving mechanisms it will be desirable to define the defects that remain and are of a general character, and, taking our stand upon the uncertain ground which is as much of imagination as fact, indicate the lines along which possible improvements may lie. The results of the ingenuity which has recently been exercised upon the problem of weaving do not stop with automatic looms. A plan is now being tried for keeping the shuttle in continuous motion and increasing the proportion of time in which it is actually contributing to the production of the fabric. On ordinary looms it has been calculated that for something like three-quarters of the time during which the loom is active, the shuttle is moving away from the web, or towards the web, or is resting stationary in the shuttle box. Moreover almost immediately after motion has been imparted to the shuttle it is suddenly checked and the reverse motion is given to it. These obvious defects in the ordinary loom it is proposed to repair by a most ingenious device. A number of warps are placed vertically in a circle with slight gaps between the warps to mark the divisions between the separate pieces of cloth. Round the circle the shuttle flies

1. Upon this question see T. M. Young's book on the American Cotton Industry, and the chapter on the Cotton Industry in Brassey and Chapman's *Foreign Competition*. It is obvious that inventions for increasing the output from each factory will be more attractive in places where the industry is growing rapidly than in places where it is stationary or growing slowly.

continuously, the warps crossing behind it as it passes and opening to receive it as it shoots round again to the same spot. Between each piece of cloth the weft is automatically cut after the shuttle has passed on, and the jagged edges are mechanically worked into the selvage. It yet remains to be seen what future there is for this invention or others on similar lines. Certainly it would be no small matter to save some of the wasted power and wasted time associated with the movement of shuttles to and fro, and banish for ever the horrid clatter and din that deafen one to-day in weaving sheds.

Another novel modern idea of a path-breaking character is to remove the shuttle altogether and replace it with a weft carrier. Weft carriers, however, while they are said to be not intrinsically unsuitable for the production of heavy sorts of woollens, have so far been pronounced inapplicable to the cotton industry; but improvements and simplifications may be expected, and at any rate it may be well for the future of the cotton industry that those engaged in it should realise that disadvantages appertain to the use of a shuttle loaded with weft and that another method of weaving is not unthinkable.[1] It should be noticed that the system of weft carriers would unavoidably perpetuate, in some degree, the defects mentioned in the previous paragraph.

The fundamental conception which has been worked out in the system of the weft carrier is to fetch the weft from each end of the loom alternately, dragging it from immense spools which may not be exhausted for two or three days. Amounts of weft sufficient for a double journey through the warp are automatically sheared off; the carrier seizes one end of the weft and drags it

1. An illustrated article on weft carriers will be found in the *Textile Manufacturer* for March 15th, 1899.

through the warp, and afterwards drags in the other end of the length of weft which has been cut off. A continuous weft is therefore not to be found in the fabrics constructed by weft carriers. It is obvious that, if the system of drawing the weft from supplies which are not conveyed backwards and forwards in the shuttles is employed, an unbroken weft becomes an impossibility. Hence the root idea for avoiding the carriage of a cop of weft in the shuttle was that of inserting weft in lengths sufficient to go twice through the warp. It may aid the imaginatioin to think of the weft as in the form of hair-pins which are inserted alternately from each side of the warp. One side of the loop of weft is laid with one traverse of the shuttle and the other side is laid when the carrier enters the warp the next time from the same side. On its return journey the carrier performs the same process with weft fed in from the other side. It might be thought that even plain cloth so woven would have jagged edges, but this is not the case since only half the picks on each side have cut ends and the loop which comes over each severed end holds it in place so that a continuous and smooth selvage is formed. Weaving without a shuttle is a novel idea, but there appear to be economies associated with it. For example, pairs of warps need not be so widely divided if the passage of a carriage containing considerable supplies of weft can be avoided, and the wider the warps are divided the greater is the strain to which they are subjected. Again continuous weaving is secured without self-feeding arrangements since the spools from which sections of weft are drawn may be of a size to last several days; and again the waste of unexhausted cop bottoms is saved.

CHAPTER III.

The Hand-Loom Weavers.

So far we have traced the general lines of development in the productive forms of the British cotton manufacturing industry by which it passed from the cottage to the steam-weaving shed; it now remains to examine the changes which took place in the material circumstances of those who had made cottons for the country before the steam-loom was thought of. To consider this question here involves leaving for a time the story of the coming of the factory half told—for hitherto nothing has been said of the progress of the factory system in spinning—and assuming something of what has yet to be recounted.

The lot of the hand-loom weaver was not an unpleasant one throughout most of the eighteenth century. Certainly his food was simple, and included little meat—in fact it was a diet which would be regarded as miserably inadequate by any artisan of to-day—his clothing was coarse and he worked hard; but his life was not without variety, and it could be spent in the country and fresh air. Guest says of the weavers that they were a fine body of men, full of the spirit of self-reliance. This he attributed to the fact that they sold their cloth and not their labour, that they were not servants but independent business men; and, further, to the facility with which they changed their employers, to "the constant effort to find out and obtain the largest remuneration for their labour, the incitement to ingenuity which the higher wages for fine manufactures and skilful workmanship produced, and a conviction that they depended mainly on their own exertions."

Undoubtedly at certain periods in the second half of the eighteenth century many weavers were in more flourishing circumstances than they had ever been before. The inventions of the jenny, mule and water-frame, together with the cylinder-carder and the warping-mill, greatly lowered the cost of warps and weft. The mule yarns, which were finer than any cotton yarns previously produced in this country, were made up into delicate fabrics, muslins and light goods. These became extremely popular and entered into competition with such Eastern textiles as were still imported for consumption in spite of the heavy duties by which they were discouraged. And calico printing began to be more extensively practiced in the second half of the eighteenth century, especially towards its close. Hence it came about [1] that the amount of cotton wool imported increased in the period 1781–91 nearly 320 per cent.,[2] and that there was not a village within 30 miles of Manchester, on the Cheshire and Derbyshire side, in which cotton-manufacturing was not being carried on, and in numerous instances by those who had worked hitherto as weavers of woollen and linen goods but " were declining to produce those fabrics as the cotton trade increased." [3]

The intense demand for hands to work up cotton caused a marked contraction of the woollen and linen industries in Lancashire,[4] " while the old loom-shops being insufficient,

1. For an account of the legislative encouragements and discouragements of the cotton industry see *note* at the end of this chapter.

2. The rates of increase in the amounts of cotton wool imported for periods of ten years were as follows :—

1741—51	....	81 per cent.
1751—61	....	21½ ,, ,,
1761—71	....	25½ ,, ,,
1771—81	....	75¾ ,, ,,
1781—91	....	319½ ,, ,,
1791—1801	....	67½ ,, ,,
1801—11	....	39½ ,, ,,
1811—21	....	93 ,, ,,
1821—31	....	85 ,, ,,

Observe the enormous rate throughout the period of 1771 to 1801.

3. *Origin of the New System of Manufacturing*, 1828, by William Radcliffe.

4. Radcliffe, p. 65.

every lumber-room, even old barns, cart-houses and outbuildings of any description were repaired, windows broke through the blank walls, and all were fitted up for loom-shops. This source of making room being at length exhausted, new weavers' cottages with loom-shops rose up in every direction."[1] The period, from 1788 to about the end of the century, was indeed "the golden age of this great trade,"[2] and it was a golden age for the operatives. In these years, says Radcliffe, "the operative weavers on machine yarns, both as cottagers and small farmers, even with three times their former rents . . . might be truly said to be placed in a higher state of 'wealth, peace and godliness,' by the great demand for, and high price of, their labour, than they had ever before experienced. Their dwellings and small gardens clean and neat,—all the family well clad,—the men with each a watch in his pocket, and the women dressed to their own fancy,—*the church crowded to excess every Sunday,*—every house well furnished with a clock in elegant mahogany or fancy case,—handsome tea-services in Staffordshire ware, with silver or plated sugar-tongs and spoons,—Birmingham, Potteries, and Sheffield wares for necessary use and ornament, wherever a corner cupboard could be placed to *show them off,*—many cottage families had their cow, paying so much for the summer's grass, and about a statute acre of land laid out for them in some croft or corner, which they dressed up as a meadow for hay in the winter. As before observed, I was intimately acquainted with the families I am speaking of in my youth, and though they were then in my employ, yet, when they brought in their work, a sort of familiarity continued to exist between us, which in those days was the case between

1. Radcliffe, p. 65. He is writing of the period 1788 to 1803.
2. *Ibid.*, p. 63.

all *masters and men*."[1] This description, which, however, was not true of the fustian-weavers whose condition was becoming wretched, does not exaggerate the prosperity of certain classes of weavers, particularly those who were engaged on cambrics. "When cambrics were made for ladies' dresses," says French, quoting an old inhabitant of Bolton, "weavers were vast weel off, could get six and thirty shillings a week."[2] That was about the end of the eighteenth century. Operatives who were even more prosperous were those working at the muslin trade, which began in England and Scotland about 1770 and in Ireland in 1780. The trade of muslin-weaving about 1793 was "the trade of a gentleman;" the operatives "brought home their work in top boots and ruffled shirts, they had a cane, and took a coach in some instances, and appeared as well as military officers of the first degree."[3] They were very exclusive, according to French, and "would smoke nothing but long churchwarden pipes, and objected to the intrusion of any other handicraftsmen into the particular rooms in the public-houses which they frequented."[4] John Kingan told the Committee on the Hand-loom Weavers in 1834 that after the invention of the fly-shuttle the wages of weavers doubled and trebled, and that some earned in 1790 about a hundred pounds a year.

Such were the circumstances of the fine workers; but at the same time the trade of coarse weaving was steadily becoming worse, to some extent in all probability because the popularity of fine goods lessened the demand for coarse goods, to some extent because those who failed at

1. Radcliffe, p. 67.

2. p. 62. Compare *Annals of Agriculture*, xvi. 423 (quoted from Cunningham, p. 449) where it is stated that cotton-weaving was so profitable at the beginning of the century that weavers were attracted from the woollen industry.

3. Reports, etc., 1834, x. Q. 5342, cf. also 5320.

4. *Life of Crompton*, p. 73.

the more delicate work fell back on the heavier as a last resource, and to some extent because coarse weaving was an accomplishment requiring no special skill which could be easily and rapidly learnt. The state of affairs at Oldham may be found pictured in Rowbottom's vivid pages. "From February to October, 1788, the fustian branch received a severe stab owing to so many houses failing, and those that stood their ground taking advantage and grievously oppressing the poor." June 12th, 1792 . . . died . . . "he was a fustian manufacturer, but character contrary to most, for he was sincerely a good man." August 1st, 1793: "The relentless cruelty exercised by the fustian masters upon the poor weavers is such that it is unexampled in the annals of cruelty, tyranny and oppression, for it is nearly an impossibility for weavers to earn the common necessaries of life, so that a great deal of families are in the most wretched and pitiable situation." From these extracts it is further apparent that friendly relations between masters and weavers were not so universal as Radcliffe was inclined to suppose or wished to believe; the weavers naturally attributed their ills to the fustian masters.

The distress of the coarse weavers, apparent even before the nineteenth century began, proved to be but the beginning of a depression which was ultimately to drive the trade of hand-loom weaving out of existence. From 1785 to 1806, reported the Commissioner for Scotland, hand-loom weaving was a prosperous trade; about 1793, however, it began to decline; after 1816 it collapsed completely. In 1835 the Committee appointed to consider the condition of the hand-loom weavers was offered a description written by one of its members, an employer, the famuos champion of the factory workers, John Fielden, in which the situation of the weavers was represented as appalling; and

although the author was warmly in sympathy with the operatives, and keenly desirous of carrying his Bill enforcing a minimum wage, his statements certainly did not exaggerate the state of affairs among large classes of workers. His assertions were "that a very great number of the weavers are unable to provide for themselves and their families a sufficiency of food of the plainest and cheapest kind; that they are clothed in rags, and indisposed on this account to go to any place of worship, or to send their children to the Sunday schools; that they have scarcely anything like furniture in their houses; that their beds and bedding are of the most wretched description, and that many of them sleep upon straw; that notwithstanding their want of food, clothing, furniture and bedding, they, for the most part, have full employment; that their labour is excessive, not infrequently 16 hours a day; that this state of destitution and excessive labour induces them to drink ardent spirits to revive their drooping powers and allay their sorrows, whereby their suffering is increased; that their poverty and wretchedness cause many to embezzle and sell the materials entrusted to them to be worked up; and that to such an extent has this now gone that there are now notoriously receiving houses at which the weavers can exchange such embezzled materials for spirits, victuals and money." Every detail of this description was established by the investigations both of the Committee of 1834 and of the Commissioners and Assistant Commissioners who pursued the enquiry in a more critical frame of mind in and after 1839. Owing to poverty children were not merely ceasing to attend Sunday School, but ceasing to receive any education at all.[1] Wages were so low that in many cases it was only through large funds being provided "by legal provision, by

1. *e.g.* Report of the Assistant Commissioner for Scotland, who remarked that at Anderston, Glasgow, of 160 children under 12 only 123 were being educated.

spontaneous contribution, and recently by the King's letter" that districts were preserved from the immediate horrors of famine.[1] The food in common use was of the coarsest kind; it consisted mainly of water porridge and potatoes, and even of these the weavers did not always enjoy a sufficiency. Some weavers became irretrievably bound to their masters by advances.[2] In this state of decay in the industry dishonest agents, who ground down the weavers by giving out less weft than the masters allowed and in other ways, became not uncommon. The alarming spread among the weavers of the practice of embezzlement was admitted on all sides,[3] and a class of men called "mooters" appeared, whose profession it was to deal in stolen yarns. Some small manufacturers, in Scotland at least, acquired an unenviable notoriety under the names of "small corks" or "bowl-cork manufacturers," which were applied to them owing to their extensive employment of embezzled weft; they lodged their weavers as a rule and they were charged with persistently "cutting" rates. Embezzled weft was collected by women who travelled about the country under the pretence of selling crockery or bowls; hence the terms "bowl-weft" and "bowl-corks." One master expressed a fear that many weavers could not have made a living without indulging in malpractices, and for that reason he was opposed to strong repressive measures being taken. Weavers of the better sort felt keenly the disgrace into which the surrender to dishonesty was dragging their class, and at Preston they proposed to the masters in 1825 to combine, with the co-operation of the masters, in order "to do away with the monster, as they called the embezzler." The masters, however, discouraged the notion, suspecting no doubt that

1. Reports, &c., 1826-7, v. p. 4.
2. Reports, etc., 1834, x. Q. 6338, 6348—52, 6356—63, 7573—5.
3. A letter from the Deputy-Constable of Manchester (Reports, etc., 1834, x. 5032) describes a state of affairs which was common.

the cure might prove more harassing than the original trouble.[1]

It would be a mistake to suppose that great distress existed, universally, or that distress existed equally in all branches of the industry. The able Commissioners of 1839 drew attention to this point and divided the weavers, whose condition they had been appointed to examine, into four classes according to the general nature of the work upon which they were engaged. There was work requiring (1) no strength and no skill, or (2) skill only, or (3) strength only, or lastly (4) skill and strength or unusual skill. Weavers on the first kind of work naturally suffered the most and those on the last kind the least; in fact the latter, said the Commissioners, were earning from 20s. to 28s. a week. To such differences in occupation the discrepancies between the accounts rendered by different witnesses and authorities must be largely attributed. The following figures obviously represent the state of affairs at one extreme, but they seem to have held approximately of a large proportion of the total trade:—[2]

1797—1804	price	26/8—281 lbs.	of provisions.
1804—11	,,	20/—238 ,,	,,
1811—18	,,	14/7—131 ,,	,,
1818—25	,,	8/9—108 ,,	,,
1825—32	,,	6/4— 83 ,,	,,
1832—34	,,	5/6— 83 ,,	,,

1. Reports, etc., 1834, x. Q. 5894-5.
2. Reports, etc., 1835, xiii. p.13. Compare with these figures the following:—

Prices paid for one kind of cloth at Bolton.

1797	29/-
1807	18/-
1817	9/-
1827	6/6
1834	5/6

(Reports, etc., 1834, x. Q. 5032).

Prices for weaving 6—4ters, 60 Cambrics, 24 Yards, 160 picks in inch.

1800	31/6
1810	22/- (average)
1820	12/-
1822	12/-

(Guest, p. 35 *note*).

The following was given as an average movement:—

Jan. 1st, 1800	£4	9	0
Sep. 13th, 1802	5	0	0 (highest)
Dec. 1st, 1806	3	0	0
Mar. 10th, 1808	2	5	0

(Reports, etc., 1808, ii. p. 103). This of course was not weekly. On this question see also Bowley, *Wages in the United Kingdom*, pp. 110-3, and table to face p. 119.

The last column is calculated on the assumption that the wage was spent in equal proportions on flour, oatmeal, potatoes and butcher's meat. The fall in wages was somewhat less rapid than that shown by the above prices, since within this period some minor improvements effected in the cottage-loom must have rendered it more productive, though in view of the evidence given at the time we cannot attach much weight to this consideration. On the other hand, it was frequently asserted that warps were becoming longer, while weavers continued to be paid by the piece. In view of the care exercised by the Commissioners in their examination and of their undoubted ability, we cannot do better than accept their statement on the movement as a whole after the peace. "It appears," said they, "that the wages of the hand-loom weavers have been reduced generally since 1815 to one-half or one-third of the wages paid at that period, and that the sums reduced were largest in 1816, 1817, 1826 and 1829."[1] The fall during the previous fifteen years had been roughly from 30 to 50 per cent.; the total fall therefore ranged in all probability from about 60 to 80 per cent. The wage of the worst paid weavers, who worked terribly long hours, fell as low sometimes as 5s. or 6s. a week; on the whole, it ranged up to about 10s., and upon this sometimes a man, his wife and children had to make shift to exist. Compare with this the earnings of the spinners in Manchester.[2]

In considering the circumstances of the hand-loom weavers the distinction between the town weavers and

1. Reports, etc., 1835, xiii. p. 12. Porter's figures for hand-loom weavers' wages, given in *Progress of the Nation*, were—

1810	....	16 3
1815	....	13/2
1819	....	9/6
1824	....	6/6
1832	....	9/-

2. See note on p. 75.

those who occupied small farms must be borne in mind. It was upon the latter, the Committee on Emigration reported, that the distresses of the times fell with peculiar severity, though both classes were reduced to deplorable poverty. They were engaged chiefly on the rough work, and they were the first to suffer when work was slack. Moreover they were forced by the payment of increasing poor-rates to assist in the support of many of their fellow weavers who were employed in manufacture alone; and, continued the Committee on Emigration, "a remnant of honest pride and shame has prevented many of those in the extremest distress from applying for parish relief; while others, being from their remote situation less immediately under the eyes of the regular authorities, have lingered on, till found accidentally, as has been proved in evidence, in the last stages of misery and disease." The Committee proposed that these weavers should be helped to emigrate, since they were also agriculturists and would not therefore be utterly at a loss in an undeveloped country.

The complete collapse of the rates for hand-loom weaving suggests the existence of some unusual combination of events. In certain years, it is true, distress was general, but it was less than that suffered by the hand-loom weavers; bad harvests, heavy taxation and the industrial and commercial disorganisation due to the war are not, therefore, a sufficient explanation. Many laid the blame on the corn laws, but their incidence, again, was largely general. Nor is any peculiar incidence of the war on our textile industries a sufficient reason, for the war ceased in 1815 and the special depression intensified. The causes for the collapse of hand-loom weaving must have consisted in forces tending to diminish relatively the demand for hand-loom weavers or

relatively to increase their supply; and both sets of influences were at work. The power-loom diminished the demand for hand-loom weavers. But it was introduced very gradually, and for a long time a single operative could not manage more than one or two power-looms; and, as the economies of the new method of manufacture developed, falling prices necessitated an enlarged output. Apart, then from the attitude of labour, the power-loom need not have occasioned the intensity of distress with which its appearance was associated. Only the direst necessity, however, could drive the typical hand-loom weaver into a steam-factory, and not infrequently he preferred to fight famine at close quarters rather than surrender his liberty. The effect of every new steam-loom, therefore, was to diminish the demand for skilled craftsmen. Most hand-loom weavers competed with the factory, instead of entering it and attempting to secure for themselves as large a share as possible of the gain resulting from new economies in production. Moreover the supply of hand-loom weavers tended to increase. Labour was being driven from a partial dependence on the land; the restrictive measures of trade societies were preventing an adequate absorption of the rising generation in certain callings, and the weavers themselves proved far too weak to maintain such barriers around their own trade; moreover some kinds of weaving were very easily learnt after improvements in the loom had rendered the work upon it simple and mechanical. Weaving, therefore, became the natural resource of many who were unemployed, for instance discharged soldiers, of whom a great number "exchanged the musket for the shuttle" after the peace of 1815.[1]

Such were the most important causes of the diminishing

1. *e.g.* Reports, etc., 1839, xlii. p. 568.

earnings of the hand-loom weavers. Their effect was heightened by the new spirit of enterprise which stirred in certain classes. Not foreign competition but home competition proved the most terrible enemy of the old-fashioned. New commission houses, keenly competing with their rivals,[1] and new manufacturers struggling into the market, gave a stamp to the early years of the new century in Lancashire. But the handicraftsmen as a whole at that time were entirely unenterprising; it is small wonder, therefore, that competition cut prices at their expense. Their wages stood for the line of least resistance. Thus the clue to much of the explanation that we are seeking is the co-existence of the old order and the new. New forces were working themselves out among old customs. The inventions of the times and their adoption were an outcome of the new spirit; keener competition was an outcome also, as well as the small holders being despoiled of their land. The typical hand-loom weaver with his cottage and loom, who dreaded the thought of factory-life and remained rooted like a tree in his parish, represented a social order that was already obsolete.

Power-looms were not used at all in the woollen industry until after 1839, and at the same time they were used only to a slight extent in the linen industry. Up to 1839 therefore, and probably later, the wages of woollen weavers had not fallen materially, at any rate in the East of Scotland, while those of linen-weavers had been reduced less than the wages of cotton-weavers.[2] Yet the cotton-weavers in Scotland, and perhaps those in England, did not attempt to transfer their labour to the woollen industry, partly for lack of enterprise, partly

1. The growing keenness in the commercial world needs no demonstration to those who have read the Parliamentary Reports bearing on business matters of the first forty years of the last century.

2. Reports, etc., 1839, xlii. p. 708.

because they could not give the few days requisite for learning the new work, or afford to remount their looms even at the trifling cost of 20s. Whole villages, however, went over to the linen industry.[1]

Master spinners were induced by the invention of the power-loom to add weaving-sheds to their spinning-mills; hence the invention of the power-loom in this country meant that in some degree manufacturers substituted cloth for yarn in their exports. The demand for steam-weavers was thereby augmented, and this somewhat offset the contraction of demand consequent upon the introduction of a labour-saving appliance. Higher wages were earned by factory hands than by hand-loom weavers, though the rates paid in the factories were less than those paid for hand-work. Even in the factories in which steam-looms were not used the wages earned were higher than those of cottage weavers.[2] This, there is reason to believe, had not always been the case, but the economies effected by organisation were intensifying year by year as the new economic order unfolded itself, while the average efficiency of domestic workers was diminishing through their ill-nourishment and hopelessness, as well as through the withdrawal to other callings of the most alert and the influx of almost unemployable labour. Partly as a result of the attitude of the hand-loom weavers as a whole, the first steam-weavers, both in England and Scotland, were nearly all women.[3] They were assisted by children. It was not until some years later that the rising male generation began to be absorbed by the new industry. In 1824 the only men employed as a rule were the "dressers;"[4] but "dressing" had never

1. *Ibid.*, p. 711.
2. On the above see *e.g.*, Reports, etc., 1839, xlii. p. 522; 1840, xxiv. 605.
3. Reports, etc., 1824, v. pp. 302 and 481.
4. Reports, etc., 1824, pp. 302 and 481.

been a distinct domestic industry. The greater ease with which spinners passed into mills is to be explained in much the same way; spinning as a separate industry for men appeared only with the inventions which led ultimately to its organisation in factories.

Note.—It is necessary to take into account the more important legislation by which the British cotton industry was discouraged or fostered, but in view of the main purpose of this work it will be best to place such material as should be laid before the reader in a compact form in a note. In 1774 the remainder of the Act 7, Geo. I., c. 7, prohibiting the use of any "printed, painted, stained, or dyed calico" (excepting only calicoes dyed all blue, and muslins, neckcloths and fustians) which was not set aside by the Act 9, Geo. II., c. 4, allowing British calicoes with linen warps, was modified by the Act 14, Geo. III., c. 72, which enacted that goods wholly made of cotton, and printed and stained, etc., might be manufactured, used and worn in Great Britain, provided that a duty of threepence per square yard were paid thereon, and each piece were stamped "British Manufactory." This was the amount of the excise charged on cotton-linens. Foreign calicoes, not printed, etc., were subject to a tax of twice this amount, and the officers of excise had insisted on the full sixpence being paid on British goods all of cotton on the ground that though made in England they were calicoes. Relief from this burden, and from the prohibition of British all cottons when printed, etc., as described above, was obtained from the Legislature (against the strong opposition of numerous Lancashire manufacturers) on the instance of Arkwright, whose invention of a means of making from cotton a twist firm enough for warps was rendered nugatory by them. After various alterations in the tariff the excise on printed "British manufactory" and British muslins was established on May 10th, 1787, at 3½d. per square yard,[1] at which it remained until the repeal

1. See list given in Baines, p. 328.

of the duty on March 1st, 1831, by the Act 1, William IV., c. 17. In 1785 the taxes on certain classes of "British manufactory" had been greatly raised—previously, too, there had been increases—so that goods between the values of 1s. 8d. and 3s. a yard paid $5\frac{3}{4}$d. and those over 3s. in value paid $8\frac{1}{5}$d. per yard. In 1784 the younger Pitt tried to raise revenue also from the cottons and cotton-linens which were not printed by imposing an excise of 1d. per yard upon goods under 3s. a yard in value, and upon those over 3s. in value one of 2d. per yard, but this "fustian tax," as it was called, excited such clamorous opposition in Lancashire from both masters and men that the next year its withdrawal was deemed expedient.[1] On the other hand, as affording some discouragement to the cotton industry, we must notice here the import duty imposed on cotton wool in 1798. The duty varied from time to time and it was not repealed until 1845. In 1798 it was fixed at one penny per pound on cotton imported in British vessels; from 1809 to 1814 it stood at its highest, at twopence per pound. Cotton imported in foreign vessels naturally had to pay more since Navigation Acts remained in force—except for short periods of suspension—until the close of 1849. The produce of British Colonies was specially favoured; in 1821 West Indian cotton was exempted from duty if imported direct; and after 1828 the produce of British possessions, though taxed, was charged at a lower rate. By an Act of 1700 (11 and 12, William III., c. 10) the importation of calicoes, painted, dyed, printed or stained, from Persia, China or East India was prohibited, unless they were imported for export. The provisions of this Act continued into the nineteenth century with the requirement to warehouse the goods, which were made liable to duties varying from time to time. By an Act of 1819 accounts of the goods carried into and out of the warehouses were no longer required. A communication received from the Custom House says:—"There is no absolute statement that this was connected with

1. An account of the incident will be found in Helm's *History of the Manchester Chamber of Commerce*, pp. 13—14.

a relaxation of the requirement to export, but it is almost certain that it was so, because in the repealing Act of the first great Customs Consolidation of 1825 (6 Geo. IV., c. 105) the whole Act was included at follows:—'43. An Act passed in the eleventh and twelfth years of the reign of King William the Third intituled an Act for the more effectual employing the poor by encouraging the manufactures of this kingdom.' (11 and 12, William III., c. 10). In the first two or three Statute Law Revision Acts (after that system for simplifying our Statute Law was adopted) no further repeal took place of this particular enactment, but in 1867, in the Statute Law Revision Act of that year, there is a final repeal of the enactment (30 and 31 Vict., c. 29). The circumstances of this repeal following that of 1825 is explained by reference to the papers of the Statute Law Revisions, from which it appears that the Reviser in 1867 had doubts whether the repeal of 1825, based upon only a partial relaxation in 1819, was a complete repeal. The repeal, therefore, was re-enacted with a statement in the explanatory papers that the Act 'so far as not repealed as above mentioned was spent or obsolete.'"

The following duties on imported cotton goods are quoted from Baines (p. 325), and brought up to date:—

	EAST INDIA. WHITE CALICOES. per piece.* Per cent. ad. val.	EAST INDIA. MUSLINS AND NANKEENS. Per cent. ad. val.
1787—5/3 and	£16 10 0	£18 0 0
1797—5/9 ,,	18 3 0	19 16 0
1798—5/9 ,,	21 3 0	22 16 0
1799—6/8 ,,	26 9 1	30 3 9
1802—6/8 ,,	27 1 1	30 15 9
1803—	59 1 3	30 18 9
1804—	65 12 6	34 7 6
1805—	66 18 9	35 1 3
1806—	71 6 3	37 7 1
1809—	71 13 4	37 6 8
1813—	85 2 1	44 6 8
1814—	67 10 1	37 10 0

East Indian dyed goods were prohibited.

* A piece being 10 yards long when not more than 1¼ yard wide, and 6 yards long when above that width.

The importation of cotton goods from places other than the East Indies was inconsiderable until 1825.

Cotton manufactures of all sorts, not made up.

1825. £10 per cent. ad valorem, and an additional duty of 3½ per square yard, if printed.

1832. Repeal of additional duty of 3½ per square yard on printed cottons.

1840. Additional 5 per cent. on cotton manufacturers of all sorts not made up.

1846. Repeal of the £10 per cent. and of the additional 5 per cent.

CHAPTER IV.

The Coming of the Factory System in Spinning.

In the cotton industry, in the department of spinning as in that of weaving, two industrial revolutions at least took place, and two distinct factory systems were set on foot. The first only was a revolution; the second was a gradual evolution. Spinning by rollers initiated the one; the jenny and the mule introduced the other.

The differences between the systems established by these two inventions resulted from essential differences in the characters of the new machines, and in the demands made by each upon motive power, and upon capital and skill. An entirely new principle was involved in the method of spinning by rollers. The grip of the rollers was substituted for that of the human hand, and the greater speed at which the second set of rollers revolved when compared with the first set produced the same effect as the stretch of the arm by which previously the yarn had been dragged from the roving. On the other hand, the jenny was a far less developed machine involving quantitative rather than qualitative changes. The grip of the human hand, and the drawing by the human arm, were still essential, but the single grip and the single draw were, by a mechanical appliance, extended to many threads. The jenny simply multiplied human hands while the water-frame was a substitute for human skill. The water-frame, therefore, summoned into the cotton industry a lower class of labour—unskilled adults, male and female, young persons and children—but it cannot be said to have displaced skilled cotton spinners in any appreciable degree, since it was confined chiefly to the production of warps which had previously been made of

linen or wool. On the other hand, jennies and mules could be worked economically only by skilled spinners, and their effect was, therefore, merely to reduce the quantity of labour needed for a given output, and to substitute men's labour for women's and children's, because greater strength and endurance was required to use them than the one-spindle wheel. At first, it is true, jennies containing at most twelve spindles were worked by children of from 9 to 12 years of age;[1] but these machines were soon displaced by larger jennies both because the latter proved cheaper and also because the spinning done by children was unsatisfactory when a higher level of quality in yarns began to be expected. In addition to the jennies, machines called "Dutch wheels" became "extremely prevalent," about the end of the eighteenth century, for "the spinning of cotton yarn for warps and hosiery." They were described by Edwin Butterworth as "horizontal wheels, moving various numbers of spindles, but generally from twelve to twenty."[2] Probably they consisted of an improvement made by Dutch mechanics on the jenny to render it more suitable for the production of twist.[3] After the invention of the mule, which embodied the principles of the jenny and water-frame and which, according to Crompton, was completed in 1779,[4] still greater skill was required for weft-spinning than before. And, it should be noticed, the use of water-power meant a far less economy in the case of jennies and mules than in the case of Arkwright's frames; for while the former needed each a highly skilled adult and could be worked entirely by hand, the latter were so heavy as to require more than human power to drive them, while most of the work on them

1. Aikin, p. 167.
2. *History of Oldham*, p. 126. See also Andrew's *Annals of Oldham*.
3. Mr. Andrew tells me that he has discovered what he takes to be a Dutch wheel at Messrs. Platt Brothers at Oldham. Much interesting old machinery used in the cotton industry is preserved in the museum at Bolton.
4. Baines, p. 199.

could be performed by unskilled labour. A large mill—and hence much capital—and a constant stream of water, though comparatively unimportant for a long time in weft-spinning, soon became essential to the successful employment of the water-frame. Improved carding machinery (which in the period 1770 to 1788 could be applied for all numbers up to 40 hanks in the pound, though the carding for the finer numbers of 60's to 80's was still effected by hand),[1] drawing and roving-frames, and finally the scutching machine for opening and more thoroughly cleaning the cotton, added to the economies of the industry on a large scale. The scutching machine, invented by Mr. Snodgrass, of Glasgow, in 1797, was not introduced into Manchester until 1808 or 1809.[2]

Arkwright did not originate the system of spinning by rollers. A patent for that process was taken out as early as 1738 by Lewis Paul.[3] That the contrivance in its early form was something more than an expensive curiosity is evinced by the fact that mills were erected for the employment of Paul's machines at Birmingham, Northampton and Leominster;[4] but certain fundamental defects in the first machinery for spinning by rollers prevented its general adoption, and it was only after Arkwright's more perfect mechanism had been introduced that the system of roller-spinning took root and spread.[5]

1. Radcliffe, p. 61. The principle of the revolving flat-carding engine which has recently been displacing other machines was invented as early as 1834 by Smith of Deanston. The machine was improved by Evan Leigh in 1858 (*Textile Recorder*, January 15th, 1901).
An account of the development of carding machinery will be found at the end of this chapter.
2. Baines, p. 241.
3. Baines supposed that Wyatt, who was employed by Lewis Paul, was the inventor, but strong evidence in support of Lewis Paul's claims was brought forward later by Robert Cole. See French's *Life of Crompton*, 1st Ed., Appendix III. Cole's paper was read to the British Association in 1858.
4. Baines, pp. 121—140; *Gentleman's Magazine*, 1854, vol. xxiv. p. 482. The first Mill was erected at Birmingham in 1742. The machinery was driven by two asses walking round an axis, and ten girls were employed on the work. This scheme failed, but a factory containing 250 spindles and 50 hands, established on a stream of water at Northampton, met with better success.
5. On the differences between the earliest machine, Lewis Paul's second machine of 1758, and Arkwright's machine, see Baines, pp. 120—153.

Arkwright obtained his first patent in 1769, and thereupon he and his partners started a small mill at Nottingham. Their machinery was driven by horses—the only motive power of which Arkwright seems to have thought when drawing up his specification.[1] In 1771, however, they erected at Cromford in Derbyshire a larger mill fitted with a water-wheel; and very shortly after the factory system based upon Arkwright's machinery was established beyond fear of collapse and was even giving signs of rapidly expanding. From 1776 to 1778 six small mills were erected in Oldham, three to be worked by horses and three by water-power.[2] The three former were probably jenny-factories: in these, owing to their comparatively small size, the use of horse-power was economical. As a rule the new twist-works were erected on the falls of rivers; hence they were frequently far away from the old weavers' villages and the towns. "There were a few exceptions where Newcomen's and Savary's steam engines were tried. But the principles of these machines being defective, and their construction bad, the expense in fuel was great, and the loss occasioned by frequent stoppages was ruinous."[3] In some cases engines were used, not to drive the machinery directly, but to raise water to an over-shot wheel.[4] The mills frequently ran night and day; and those open by day only were kept working very long hours when water was plentiful, to make up for the time lost during periods of scanty supply. Occasionally firms would own two mills, or so many pairs of mills, and when the supply of water proved insufficient for the pair, one only would run, but during both day and

1. He speaks in it of "the Cogg Wheel and Shaft, which receive their motion from a horse." Paul's machinery at Northampton had been worked by water-power.
2. *History of Oldham*, p. 117. The first factory in Preston was put up in 1777; but there was no considerable industry there till John Horrocks went to the town (Baines, *History of Lancashire*).
3. *Rise and Progress of the Cotton Trade*, John Kennedy.
4. Aikin, pp. 174-5.

night with the hands working in double shifts. Not before Watt's steam-engine was so perfected as to ensure a constant and economical supply of power, were the advantages arising from proximity to the towns and subsidiary industries sufficiently weighty to attract the water-frames from the river falls. The first mill fitted with Watt's engine was set up at Papplewick in the year 1785. In 1789 it was applied in Manchester and in 1792 in Bolton and Glasgow; about 1798 it was being introduced into Oldham.[1] Early in the nineteenth century the superiority of Watt's engines over water-power had been completely demonstrated and water-mills ceased to be built. By 1825 the mills in Stalybridge were run by 29 steam-engines and only six water-wheels; by 1831 the steam-engines had increased to 38.[2] Mention has been made above of the economies resulting from proximity to the subsidiary industries. The local development of subsidiary industries naturally took place as soon as complicated machinery began to establish itself. As early as 1797 machine-works and roller-making appeared in Oldham; by 1825 in the same town and its neighbourhood 21 firms of machine makers, 10 iron and brass founders, 5 roller and spindle makers and 4 metal and wood turners, were to be counted.[3]

As we shall observe later, the advantages of the small mills were great in the case of jenny-spinning for many years; for the skill of the operative was a matter of fundamental importance, and the careful selection and supervision of the hands was therefore essential to success. But in the case of twist-spinning conditions were different; the economies of the factory on a large scale, in respect of power, buildings, managing, marketing and the division

1. Andrew's *Annals of Oldham*.
2. Butterworth's *History of Ashton*, p. 144.
3. Butterworth, *History of Oldham*, pp. 153 and 187.

of labour, were so evident that twist mills soon assumed considerable proportions. In the earliest days some mills contained 200 or 300 hands, though most had less than 100, and in one mill at Manchester, namely that worked by the firm of Arkwright, Simpson and Whittenbury, as many as 600 operatives were employed.[1] The increase in the number of mills was rapid in view of the extent of the cotton manufacture in those days and the slow system of hand-loom weaving. In 1780 there were twenty; after the expiration of Arkwright's patent for spinning in 1783, and the final nullification of his patent for carding machinery in 1785, they sprang up in great numbers, and in 1790 as many as one hundred and fifty could be counted in England and Wales.[2] By 1811, according to Crompton, 310,500 spindles were working on Arkwright's frames in the United Kingdom; but at the same time some 4,600,000 could be counted on Crompton's mules and 156,000 on Hargreaves' jennies.[3]

The jenny did not appear a day before it was urgently needed. Had a speedier method of spinning not been introduced, considerable alteration in the distribution of labour among different employments would have been essential, for, after improvements had been effected in the loom, increasing difficulty was experienced in procuring sufficient supplies of weft. As it was, three grown persons would have been kept continually at work to provide an efficient weaver with material.[4] "It was no uncommon thing for a weaver to walk three

1. Butterworth, *History of Oldham*, p. 118. In 1833

3	principal mills in Manchester had	1400	hands	each.	
8	,,	,,	,,	500—900	,,
8	,,	,,	,,	300—500	,,
17	,,	,,	,,	100—300	,,

Some of these mills, however, may have been for mule-spinning, some for both mule-spinning and the spinning of twist, and some no doubt included weaving branches.

2. Guest's *History of the Cotton Manufacture*, p. 31. The author of *An important crisis in the Calico and Muslin Manufactory* (1788) gives 143 as the number in 1788. This is probably correct enough, but as to the value of his other figures see Bibliography.

3. French, p. 103 *note*.

4. Butterworth, *History of Oldham*, p. 163.

or four miles in a morning, and call on five or six spinners, before he could collect weft to serve him for the remainder of the day; and when he wished to weave a piece in a shorter time than usual, a new ribbon, or gown, was necessary to quicken the exertions of the spinner." [1] Naturally prices reflected the paucity of supplies: we are informed by both Ogden and Guest that it was not uncommon for the weaver to pay more for spinning than the amount allowed by the masters.[2] Yet it seems certain that the force of custom prevented men from engaging in any appreciable numbers in what was regarded as women's work. Men began to spin only when a new machine appeared the effective management of which demanded both strength and skill. The new machine was the jenny.

The gathering of jennies into mills was a gradual process which began with the first appearance of the machines. Hargreaves started a small factory in Nottingham in 1768, four years at most after the completion of his invention. But for many years the typical jenny- or mule-factory remained small. We have a picture of its gradual evolution in French's *Life of Crompton*. Probably perfected in 1779, and given to the public in 1780, "during the following five years the mule was generally employed for fine spinning. All these machines were as yet worked by hand; they were erected in garrets or lofts, and many a dilapidated barn and cow-shed was patched up in the walls, repaired in the roof, and provided with windows, to serve as lodging room for the new muslin wheels." Crompton had originally spun on a jenny of eight spindles with a view to weaving his yarn into quilting; but the profits to be acquired by increased dexterity on the mule

1. Guest, *History of the Cotton Trade*, p. 12.
2. Guest, p. 12, Ogden, p. 88.

led him to confine himself entirely to spinning. Others followed his example; and as the first mules were small, compact, cheap and unprotected, they were induced by their gains to add other mules to their stock and employ their neighbours. "Many industrious men," French informs us, "commenced business with a single mule worked by their own hands, who as their means increased, added to their machinery and progressively extended their business until they rose to honourable eminence as the most useful and extensive manufacturers in the kingdom." Robert Owen, who afterwards became one of the largest spinners in the British Isles, began in a very small way in 1789 by taking a factory and sub-letting the whole of it except one room in which he employed three men to spin upon three hand-mules from ready-made rovings, for at this time some small masters, who were half-operatives, would confine themselves entirely to the work of roving because of the cost of machinery.[1] Crompton himself is an example of the transformation of a working spinner, who began life spinning and weaving, into a master-spinner and industrial projector on a small scale. After leaving Oldham in 1791 he occupied three adjoining houses in Great Bolton and used two of them, and the attics of the third in which he dwelt, for manufacturing purposes.[2] In 1800 he "rented the top storey of a neighbouring factory, one of the oldest in Bolton, in which he had two mules—one of 360 spindles, the other of 220—with the necessary preparatory machinery. The power to turn the machinery was rented with the premises."[3] Edwin Butterworth gives interesting illustrations of the way in which businesses grew in the early days. "Mr. John Whittaker . . . commenced the cotton business with the

1. *Autobiography of Robert Owen*, pp. 24-6.
2. French, p. 71.
3. *Ibid.*, p. 80. These mules regularly worked in the same room till 1859.

possession of a small carding mill moved by horse-power . . . and also as owner of a small number of spinning machines, worked in a room near his dwelling in Duke Street (Oldham). A few years afterwards, before 1808, he became possessed of the cotton mill at Higher Hurst."[1] This is one example among many. According to Butterworth the custom of driving small carding-mills by horse-power was not unusual so late as 1807; it survived at Glodwick until 1815.[2] Before the factory had quite supplanted the half-domestic system of jenny- and mule-spinning, a family of spinners would have a gin-horse of their own, and in Mr. Andrew's *Annals of Oldham* an account is given of an ingenious arrangement by which the expense of a driver was sometimes spared. A switch, attached to the crank to which the gin-horse was harnessed, and revolving with it, stretched out under the horse's belly; by pulling a string in the work-room, the switch could be jerked up so as to administer a sharp blow. The possession of a gin-horse gave place early in the nineteenth century to the renting of "turning." The typical business for weft-spinning, nevertheless, remained small for many years.

Mr. Andrew, in his *Annals of Oldham*, in a passage appended to Rowbottom's entry under June 5th, 1818, presents a vivid picture of the internal arrangements of factories in which "turning" was hired. An uncle of his, he writes, "went to Rhodes' factory in the year 1809. He was a master cotton spinner and had one carding engine, and when the number was increased to two there was a great hue and cry in the town as if some great wonder had come. At the same mill were other small masters . . . who owned and worked in separate

1. *History of Oldham*, p. 146.
2. *Ibid.*, p. 147.

tenancies about eight carding engines altogether, my uncle's making a total of ten at Rhodes' factory, which, I warrant you, was looked on at the time as a decent sized mill. Perhaps a peep into this old mill, as given by one who worked there, may be interesting. First there was an Oldham willows, and the person who tended it had to weigh the cotton and feed it on behind the carding engine. The drawing frame dropped its sliver at the last box into a lantern; these lanterns were taken behind the rover and tended by stretchers, who were little boys or girls whose duty it was to prevent the sliver being ruffled. The rover made a cop, which was set in behind the mule. The mule contained seventeen to twenty dozen spindles, and the spinner was paid by the score hanks, having to pay out to the master 6½d. per dozen for steam (turning), candles, which sometimes cost 3s. 6d. a week according to the time run, and piecers' wages, say, 7s. to 8s. per week. The spinner was a good hand who could earn 30s. per week, and for this he would sometimes work 72 to 76 hours a week. The carder was paid on the weight of yarn weighed in by the spinner, and he received 11s. per 100lbs. Out of this he paid his own card-room hands." This organisation of the industry on a small scale remained common in certain branches long after the industry as a whole had assumed more imposing forms. At any rate up to 1838, and possibly much later, spinners of cotton waste rented a room and employed their own children,[1] and even now families of twiners may be found renting a room and power and twining on commission.[2]

The system of paying for "turning," to which reference has been made above, appears to have been the general arrangement when the use of horse-power was on the

1, *Letter to Lord Ashley criticising Nassau W. Senior's Letters*, 1838. Manchester Library.

2. Andrew's *Fifty Years of the Cotton Trade*, p. 12.

decline.[1] In certain branches of manufacturing to-day it is still not uncommon, and by its means the enterprising are enabled to start business on their own account with only a small outlay of capital. It must be observed that the payment for "turning" was frequently carried over from master to operative—as we should naturally expect in a period which witnessed the transference of the instruments of production from the operative to his organiser. The term "organiser" must be used in referring to the master of this period, and not "undertaker," because the employer produced in many cases on commission, under the direction of the cotton dealer, who was then in consequence an undertaker in part. According to Mr. Andrew spinning on commission was customary in the early years of the nineteenth century. "Although there were many large and wealthy cotton-spinners who could afford to buy their own cotton and sell their own yarn, and even own their own cotton mill, the great bulk of cotton-spinners at that time were generally practical men of small means, who were chiefly spinners on commission. This class embraced a number of small firms, who, for the most part, paid rent for turning, though the machinery was their own. Many of these men have long since ceased to work on commission, and have built large concerns, which they have worked on their own account, and accumulated large fortunes. The principle on which these commission concerns were worked was as follows:—Some wealthy agent in Manchester would provide these firms with cotton, and for every eighteen ounces of cotton weighed to the cotton spinner sixteen ounces of yarn would have to be sent back to the agent in return, or the spinner would be debited with the difference. For every pound of yarn

1. In the pamphlet entitled *A Vindication of the Chorley Spinners'* (1826) it is mentioned casually as nothing out of the common.

thus sent to the Manchester agent, so much per pound would be paid by the agent to the spinner, according to the counts of yarn spun: thus, 36's counts were paid for by the agent at the rate of $4\frac{1}{2}$d. per pound; this $4\frac{1}{2}$d. would cover turning, wages, and trade expenses, and would also have to afford profit to the spinner. The loss of weight in working was supposed to be covered by the two ounces of cotton allowed over the 16 ounces of yarn accounted for, the waste being considered to belong to the spinner."[1] Even those who did not spin on commission were frequently financed by the cotton dealers in receiving credit, which sometimes extended to three months, on their purchases of cotton: the terms for the purchase of yarns at the time were cash or short credit.[2] In later years the spinner became more independent, and the cotton dealer ceased to perform, with reference to yarns, the functions that used to be exercised by the undertaker, or piece-master, with reference to fabrics. Mr. Robert Ellison[3] declares that the Manchester dealer continued to finance the spinners until the Manchester cotton market was killed by the success of the Manchester and Liverpool railway. Of the financing of the industry by dealers we have a modern analogy in certain branches of manufacturing in which yarn and cloth agents are performing for certain small manufacturers services such as those that were offered by Manchester cotton dealers to spinners in the past. The explanation of the identical distribution of responsibility in these two cases is to be found in the similarity of the conditions which limited early mule-spinning with those that prevail in respect of some kinds of manufacturing to-day.

1. *Fifty Years of the Cotton Trade*, p. 2.

2. See for example *The Origin of the New System of Manufacturing* by Wm. Radcliffe, 1828: also the evidence of Geo. Smith before the Commission on Trade of 1833.

3. *The Cotton Trade of Great Britain*, p. 176.

The reasons for the arrangements sketched above are not far to seek. At the beginning of the nineteenth century, public belief in the profitableness of the cotton industry and in the safety of money devoted to it was not sufficient to cause much capital to seek investment in Lancashire. Credit machinery was undeveloped, markets were crude in their organisation, and productive methods were in a state of change. The success of a business depended in a high degree then upon its master—upon his powers of managing and arranging his factors in production, and his capacity to attract demand and make his own market. Hence only those who knew the borrower and his market would loan their capital.

Prior to Hargreaves' invention of the jenny, and afterwards until it had forced its way into the working system, a shortage of yarn for the manufacture of cottons was constantly making itself felt in Lancashire. Before, however, the century had run its course a greatly enlarged home demand for yarns was being easily met and an important export trade had begun.[1] The export of yarns exercised a steadying influence on the weaving industry since the supply of yarns, even for immediate calls, was thereby rendered elastic at a price. It is true that very low prices for yarns at any time, so long as foreign markets remained open, were unlikely; but, on the other hand, very high prices were unlikely. There was another side to the shield, however, and to this certainly manufacturers were not blind. With every sign of depression in the market for fabrics manufacturers grew alarmed at the thought of material for manufacturing leaving the

1. Official values of export of yarns :—

1798	£ 30,271	1802	£428,605
1799	204,602	1803	639,404
1800	447,556	1804	902,208
1801	444,441	1805	914,475

The £2,000,000 was passed in 1820, and the value of the export never afterwards fell below it.

As these are official values (*i.e.*, values at fixed prices) they represent exactly the increase in quantity.

country. Mr. Elijah Helm, writing in the *Manchester Guardian* for January 1st, 1901, says:—"An instructive incident arising out of the export of English cotton yarn at that period is recorded in the minute-book of the Manchester Chamber of Commerce for the year 1794. Some members of the Chamber who had been visiting Germany wrote home to the effect that German manufacturers with the aid of imported English yarn were able to compete very successfully with English cloth. Before leaving Hamburg, on their return journey, they addressed a letter to the British Minister at Dresden setting forth their grievance and urging him to use his influence with the Government at home to obtain 'an immediate prohibition' of the export of yarn from the United Kingdom. From London they forwarded a communication to the Chamber requesting that a deputation should be sent to Mr. Pitt to advocate, if not the prohibition, at least the imposing of an export duty. This had already been submitted to him by letter from one of the travellers. The Chamber met, and so far acceded to the suggestion as to resolve 'that the exportation of cotton twist is detrimental to the manufactures of cotton in this country.' This action soon roused the Manchester spinners, who to a special meeting of the Chamber adduced arguments which changed the views of some of the prohibitionists. The result was that, on the motion of Mr. Samuel Greg, seconded by Mr. Lawrence Peel—a brother of the first Sir Robert Peel—it was resolved to adjourn the discussion for six months."[1] The agitation to check the export of yarn continued, however, to be pushed vigorously for a number of years, with the assistance of the cotton-spinning operatives, whose fears had been aroused, and it had not completely died out even a quarter of a century

1. See also Chap. II. of Helm's History of the Manchester Chamber of Commerce.

later. Radcliffe devoted to it his untiring energy.[1] It was asserted that the bulk of yarns for export was actually sold *sub rosa* at miserable prices, and that the foreign manufacturer, therefore, was enabled to undersell the English manufacturer. It was supposed that the export tax on yarn would result in the substitution of cloth for yarn in English exports, so that manufacturers here would secure the profits which foreigners had obtained previously, while British spinners would sell as much yarn as before, but all of it at the better prices of the home market. It was never proved, however, that the foreign manufacturer would not fall back ultimately on native supplies of yarn, and it was not explained why English cloth for export should not suffer the alleged fate of English yarns for export and sell *sub rosa* at miserable prices. On two other occasions at least, we may notice here, employers in the cotton industry looked to the Government for protection. Once, in 1787, when, under the influence of a scare brought about by bad trade, they prayed for further restrictions on Indian goods, but failed to meet with immediate success, though, whether as a result of continued efforts on their part or not, the duties on these goods were raised shortly after;[2] and again at the beginning of the nineteenth century when a society, of which the first Sir Robert Peel was an active member, existed in Manchester for enforcing the law prohibiting the exportation of machinery.[3]

We have observed that water-twist spinning was estab-

1. See pamphlets in the Manchester Library and Radcliffe's *Origin of the New System of Manufacture*, especially pp. 73—85 and 199; also Radcliffe's pamphlet on the exportation of yarn.

2. Baines, p. 330, and Macpherson, vol. iv. p. 134, there quoted; Reports, etc., 1792-3, xxxviii. 774 c. The East India Company shewed in its reply to the petition of the cotton manufacturers that 17/20ths of the calicoes imported and 12/20ths of the muslins imported were re-exported.

3. Mr. Elijah Helm in the Manchester Guardian for January 1st, 1901. See also his *History of the Manchester Chamber of Commerce*. The statement is based on the minutes of the Manchester Chamber of Commerce.

lished on a large scale from its commencement, whereas in the business of jenny- and mule-spinning the small master competed successfully with the larger capitalists for many years. In course of time, however, the enlarged number of spindles on the jenny, and the increase in subsidiary machinery and in its complexity, called for a more economical source of power than the gin-horse, and, in addition, necessitated larger businesses. By the invention of the self-actor mule spinning was ultimately to be rendered almost as automatic as weaving; but some time before the self-actor appeared power was used to drive out the mule-carriage. Further, changes in machinery led to changes in the arrangement of hands "tending" it. When the mule was altogether a hand-machine one spinner was required for each machine; but when the carriage was driven out by power and needed only to be put back by hand, it was possible, if somewhat exhausting, for the spinner after putting up one carriage to turn on his heel and thrust back the carriage behind him, which had been driven out by power into the wheel-gate while he was tending the other. The arrangement whereby one man controlled the pair soon became almost universal, and as the mules increased in weight, owing to the additions made to the number of spindles carried by them, power began to be applied also for driving the carriage back. But spinning still involved the exercise of no inconsiderable skill, for the winding had to be carefully regulated by the operative, who guided "the faller" (or wire which by rising and falling determined the part of the spindle upon which the thread should be wound) with one hand and varied the speed of the revolving spindles by turning a screw with the other. The need for skill of this kind—which meant the specialisation of the operative's organism for delicate reactions to be rapidly repeated, and was therefore wholly

mechanical in character—was removed ultimately by the self-actor mule.

The idea of a self-acting mule had stimulated and guided the ingenuity of those with mechanical tastes before the end of the nineteenth century, but, although several contrivances were devised, no invention of any appreciable value appeared until Roberts, of the firm of Sharp, Roberts and Co., machinists, of Manchester, took out his first patent for an automatic mule in 1825. The object of early attempts had been to construct a machine capable of being tended by children, but, when the mules became longer and one man began to manage two, this incentive was removed and the reduction of labour cost still further was commonly thought to be impracticable. Roberts' invention of 1825 was followed by improvements, patented in 1830, by which the self-actor was rendered of considerable economic value.[1] In its improved form the self-actor provided for the automatic return of the carriage and the winding of the yarn as well as its spinning. It could not have failed, therefore, to inaugurate striking changes in the character of the industry from the point of view of the men; when the self-actor mule was in order the duty of the spinner was reduced to the mere supervision of the headstocks and piecing.

Despite the substantial economies which followed in the wake of the self-actor mule, it was by no means rapidly adopted, although here and there it was forced into use by the turbulence of the spinners' unions and their extravagant demands.[2] Mr. Andrew, in his paper read before the British Association in 1887, remarked upon this. "For long," said he, "on account of the excessive cost very few firms were able to purchase it, and therefore

1. On the above see Baines, p. 207.
2. The statement was frequently made.

hand-mules were the rule and self-actor mules the exception." The cause, however, was not merely cost. "Before the cotton famine some hesitancy existed in people's minds as to whether the self-actor mule was a complete success, and it was only the more venturous spinners who would order a complete concern of self-actors, some having a lingering notion for the old hand-mule." Another reason also kept the self-actor out of some districts, namely, that for many years the winding accomplished by this machine was defective. In Preston, Bolton, Manchester, Chorley and other homes of fine spinning, the hand-mules more than held their own for many years. Among the medium and coarse counts the self-actor was finishing its conquests from about 1850 to 1860. Then followed the cotton famine and the stimulus to improve the machinery for spinning East Indian and short-staple cotton, with the result that the final victory of the self-actor was shortly after placed beyond a doubt. In 1882 Mr. J. T. Fielding, the late secretary of the Bolton operative spinners, wrote in his annual report that pairs of hand-mules had declined in five years in his district from 1300 to 516, and that their ultimate extinction was certain. At Glasgow the last hand-mules were done away with about 1887. In view of these facts it is astonishing that the hand-mules still in existence can be worked at a profit. Certainly it would not pay to use them if Oldham speeds were universal on power-mules, but as the yarns spun upon the hand-mules are extremely fine, the speed at which the carriages must move is so slow that one spinner can easily do what is required for the pair, though in doing it he is kept constantly at work which is merely mechanical.

Another change, in respect of the machinery in common use, has taken place in the industry. Throstle-spinning was decaying from 1840 to 1875; but ring-spinning, which

has steadily increased, especially in the last fifteen years, is now more than filling the void. The ring-frame is a simple development of the throstle-frame. In throstle-spinning a flyer directs the yarn on to the bobbin which fits loosely on a stationary peg. The flyer is set revolving at such a rate that the bobbin is dragged round by the tension of the yarn. The ratio of the revolution of the bobbin to the rapidity of wrapping determines the amount of twist given to the yarn. In the ring-frame the office of the flyer is performed by a loosely fitting wire ring attached to the collar of an orifice through which the bobbin moves up and down. The wire ring can move easily round the collar, and motion is given to it by the strain put upon it by the yarn which tends to be wound on the rapidly revolving bobbin faster than it is given out.[1]

This chapter might suitably be concluded with a short account of the processes preparatory to spinning as they are carried out in general to-day, together with a brief description of the evolution of carding, which is an operation fundamentally different from those to which we have devoted the most attention. In order to make this sketch clear I shall be bound to repeat something of what has gone before.

The fundamental processes involved in the production of yarn are four, namely, cleaning, carding, roving and spinning. The cotton is ginned before it leaves the places in which it is grown, but on its arrival at the mills it still contains much refuse which has to be removed. In early days it was beaten with willow switches to bring out the dirt, just as a carpet is beaten, but now machinery does the work though the word

1. In 1828 John Thorpe took out a patent for spinning with a ring and traveller in the United States ; in the same year Lee discovered the same contrivance, independently it would seem. Ring-spinning was well established in the United States for warp yarns by the fifties. (Paper by G. O. Draper, printed in the *Textile Recorder*, May 15th, 1900 : see also *Textile Recorder*, Jan. 15th, 1901).

"willowing" still survives. At the present time the mass of cotton being treated is torn into fragments by a bale-breaker and afterwards passed through openers, scutchers and lap-machines, in which the lumps are divided, the dirt is removed by a blowing arrangement, and the cotton is reduced to the form of a continuous flat band. It is then ready for carding, which is the process of raking the cotton fibres parallel. In early days this was effected by hand cards, which were in effect brushes with wire bristles. The cotton was brushed down again and again until the fibres lay parallel. The first improvement in carding consisted in one card being enlarged and kept stationary. Cotton was spread upon this and raked over with a hand card. Next appeared cylinder carding. In cylinder carding the fixed card assumed the form of a trough while the movable card became a spiked roller. The roller worked within the trough, which was shaped like a hollow half cylinder and fixed close to the roller. Thus the cotton was carded through being brushed by the revolving roller against the inside of the trough, which itself was also spiked or bristled. A further improvement was to brush only the cotton passing over the top of the revolving cylinder and to effect the brushing by means of smaller revolving cylinders; but this system in turn is disappearing before revolving flat cards. In revolving flat cards the cotton passing over the top of the cylinder is brushed by the inside of the trough which has been rendered flexible and is now placed on the top of the cylinder instead of below it. The brushing surface of the trough (that is the revolving flat cards) is itself in motion, it being in the form of an endless scroll like a connecting band between two shafts. The carded cotton is removed from the machine automatically and directed into a funnel and therefrom in the form of a long sliver or rope into a can

in which it is conveyed to the drawing, slubbing, intermediate, and roving frames. When it leaves the carding frame the cotton is in the form of a thick loose rope, which must be drawn out into a finer coil before it can be used for spinning. The drawing is effected by means of rollers revolving at different speeds. To enable the rope to stand the strain of the final stretchings before it is passed into the spinning machinery, a twist is given to it by means of a flyer, the effect of which is to cause the fibres to cling more tenaciously. When the coil of cotton has been rendered sufficiently fine for the purpose of spinning it is used as a roving for the spinning machinery.

CHAPTER V.

The Attitude Towards Machinery.

Among the prominent consequences of the revolution in weaving was the expulsion from the industrial field of one of the most considerable classes of workpeople in the country. Nothing of the kind happened in the case of spinning. The effect of the coming of the factory system upon spinners of the older order was to be seen rather in the assumption of a new character by combinations of workpeople—the birth of trade unionism in its modern aspect—and the adoption and vigorous pursuit of policies, with reference to the new order, by which it was intended to keep wages at a high level and secure continuous employment for all the old operatives. Other effects of the factory system—the characteristics of the new life, the new conditions of work and the new classes of workpeople gathered together and created—we shall examine later.

In endeavouring to estimate the effect of changes in the organisation of industry upon the condition of spinners who worked under another system, we must bear in mind, firstly, that in the production of weft the skill of the hand-spinner was only very gradually dispensed with, and, secondly, that Arkwright's machinery did not displace any hand-process in England, generally speaking, but merely enabled Lancashire to produce from cotton the warp for its manufactures, instead of using those made from linen or wool. If any absolute displacement of labour in the spinning industry occurred at this time as a result of

the introduction of machinery,[1] an expansion of trade very soon counterbalanced it.[2] Of course the weft-spinners suffered in periods of bad trade, and in so far as periods of bad trade were due to a growth of the industry which was too rapid for its efficient organisation, the sufferings of the operatives could be attributed indirectly to the factory system.

Whether machinery need have occasioned any long-sustained damage to the condition of the weavers or not is open to question. It is highly probable that the slowness with which machinery developed and won its way would have prevented any shock from being felt had labour followed whither invention led, and that growth of the industry would have kept up the demand for labour except for very short intervals. However, the change to the factory system having involved striking transformations, it is vain to imagine that domestic workers might have acted differently. But, whatever the effect of machinery might have been, the fact stares us in the face that the attitude of the operatives towards it was at all times antagonistic, and that the antagonism, if it died down, did not die out completely.

In giving an account of the attitude of the operatives towards machinery one must distinguish between two at least of the influences at work. On the one hand there was the uncompromising resistance of workers who were dominated by ancient customs. On the other hand

1. See Reports, Miscellaneous, 1778—82, v., paper 38 dated 1780; *Case of the Poor Cotton Spinners*, 1780.

2. The following are Bowley's figures for Spinners' nominal wages. See *Wages in the United Kingdom*. They relate only to Manchester and district. The figures are based on information obtained from different sources, but no considerable error in any one figure is at all probable. The figures in brackets are interpolated estimates. In interpreting these tables allowance must be made for the alterations in prices in the period covered by them.

	1806.	1810.	1815.	1819.	1824.	1833.	1834.	1836.	1839.	1841.
Spinners (Fine)....	32/6 ..	42/6 ..	44/6 ..	(44/6) ..	(38/6) ..	35/9 ..	36/- ..	35/2 ..	42/3 ..	31/7
,, (Medium)	(27/-)..	36/- ..	32/- ..	32/- ..	32/- ..	28/2 ..	29/6 ..	26/- ..	24/9 ..	24/7
,, (Coarse)..	(21/-)..	24/- ..	24/- ..	24/- ..	24/- ..	22/6 ..	17/6 ..	21/- ..	16/5 ..	18/11
Average..	24/2	30/-	28/11	28/11	28/2	27/1	23/4	23/11	22/11	22/-

there were the policies deliberately adopted by thinking workers in the new order, who, without hope or intention of restoring the old order, were anxious to advance their interests or at any rate to preserve their position. No periods can be assigned for the emergence of the one attitude and the subsidence of the other; the distinction lay as much in classes of people as in periods. The chief irreconcileables were the old hand-loom weavers and the first jenny-spinners before the jenny-factory had become at all usual. And, to the opposition of those whose opposition sprang from their impregnation with the ideas of another system, must be added that of the turbulent element in new classes of factory workers, who were not handicraftsmen in spirit, but rough labour drawn from a wide area and various surroundings, and many of whom, hating their masters, ill-fed, ill-housed, badly paid and overworked, were discontented, dissolute, untamed to their duties and easily led into riot and excess. In drawing this contrast, however, one must be careful not to carry the distinction too far. Many mule-spinners, with regard to machinery, held violent opinions upon which they occasionally acted.

It is not to be wondered at that inventors as a class were regarded with no friendly eye, and that if they happened to be working-men they were treated almost as traitors. Kay's loom with the fly-shuttle attached was smashed by infuriated weavers; Hargreaves was forced to retire to Nottingham, and in 1779 organised mobs wrecked the new carding-engines and water-frames and all jennies containing more than 20 spindles, or cut the latter down to that size, for only the jenny of 20 spindles was held to be a "fair machine" which could be used in cottages. On more than one occasion in Lancashire in the first quarter of the nineteenth century machinery had been

destroyed by workpeople or factories had been attacked by them with the destruction of machinery in view, and in 1826, when trade was exceptionally bad, brigades of operatives armed with sledge-hammers marched through Lancashire and systematically smashed the power-looms which were then coming into general use. Middle-class sympathisers and some unenterprising masters had encouraged certain of these outrages,[1] and there was some talk of the Luddite organisation being introduced into the weavers' association, which is not altogether astonishing seeing that the agitators in the great Lancashire strikes of 1810 are said to have afterwards led the Luddites.[2] In every conceivable fashion the hand-loom weavers attempted to impose checks on the use of machinery. The Government was even pressed, by some employers as by well as by the weavers, to tax, if it would not prohibit, steam-looms. On the other hand, numerous employers were supporting the applications of inventors, Cartwright and Crompton, for grants of money in recognition of the value of their services to the nation. The grants were made and the Government refused to play the Laodicean and blow both hot and cold.

The spinners, meanwhile, working in the jenny-factories were regarding the continued development of spinning machinery with uneasy minds. Longer mules were coming into use and the spinners were determined that they should be introduced only on such terms as would keep employment steady at least and improve the position of the operative. Limited in outlook, pardonably prone to error in reading the difficult page of economic progress, naturally inclined to be misled by the unhappy associations of our first trials of the factory system, and being

1. Radcliffe, p. 118; *Letters on the Utility of Machines*, 1780, p. 2.
2. Place MSS. 27800—21 (quoted from Webb MSS., Textiles IV. 4).

at the beginning of things in a factory order with little other experience to enlighten them, it is not astonishing that they failed to detect their true interests in the long run. And for their mistaken conclusions the ignorant and grasping attitude of many of the early employers was partially responsible. Most of the operative spinners appear to have objected to the longer mules, but the mass of influential public opinion being against them, they wisely veiled their opposition and openly demanded merely the old piece-rates and no discounts on the long mules—at Hyde in 1824, Manchester in 1829, Ashton in 1830, and at Glasgow in 1837[1]—in every case unsuccessfully, in spite of their determination and persistency.[2] The strike of 1830 was carried out at the command of the delegates appointed by the general body of operative cotton spinners, who ordered a general strike "of all those spinners who are receiving less than 4s. 2d. per 1,000 hanks of No. 40's (and other numbers in proportion) on all sizes of wheels;"[3] and during this strike the congress of spinners' delegates, meeting at Manchester, passed a resolution imposing fines on those who took work below the "fair and legal rate."[4]

The ostensible ground of opposition to discounted prices on the long mules was the contention that the amount of labour which their management entailed varied

1. *Character, object and effects of Trades' Unions*, pp. 18—20. Evidence of Doherty, McWilliams and Arrowsmith to the Committee of 1838; Report on Trade Unions to the Social Science Society, 1860, pp. 473-8. Evidence of Houldsworth and others to the Committee of 1838; see also the evidence of Bolling of Bolton, before the Committee of 1824, concerning a strike at his mill in 1822 because he had introduced mules of 400 spindles beside those of 300 and had not paid, as the men demanded, the same prices. Also *Manchester Guardian*, February 27th, 1823.

2. In the Manchester dispute the hands involved were so determined that they agreed to contribute £300 to the expenses of the strike by selling their furniture and belongings, The weekly allowance fell to 2/3 a week, and even then, after the strike had endured for six months, the men voted to hold out another six months. But the leaders were anxious to close the strike, so they arranged a vote by ballot and then declared a majority against continuing the strike, though as a matter of fact there was a majority of three in favour of holding out. (Doherty's evidence to the Committee of 1837-8.)

3. Report on Trade Unions to the Social Science Association, 1860, p. 473.

4. Resolution 10.

directly as the number of spindles. It was also urged that the health and comfort of the operatives were affected detrimentally by work on the larger mules.[1] It should be noted that the discounted prices offered by the masters provided wages which increased with the number of spindles. Whether the increases proposed were proportional to the additional labour involved on the longer mules cannot be said, but it is unlikely, in view of what was common at the time, that the masters' offer was distinguished by any conspicuous generosity. There is no doubt that the early masters on the whole did not try to make the operatives feel that they were to benefit from "improvements" in productive methods, and generally failed when they did try. Unsuitable notions as to the nature of wages were to some extent responsible for this.[2] In the matter of the long mules, the question of what was the fair extra wage for the extra work on the new machines was only the apparent point at issue. Whatever the full reason, employers were really faced by a resolute effort to stop economies in production of a particular kind, an effort, moreover, with which some of their own class were associated. The grounds for the retrograde action of a section of the employers are easy to discover, and nowhere were they more forcibly expressed than in the address issued by Doherty (the secretary of the Manchester cotton spinners) to the masters with the object of enlisting the sympathies, if not the assistance, of those of them whose interests appeared to be threatened by technical advance. Doherty pointed out that it was to the advantage of employers, with

1. In an Appendix to the first Report on the Combination of Workpeople of 1838, it is stated that the weight of coupled mule-carriages for fine yarns was 15 hundred-weight, 2 qrs., 19 lbs., and of mule-carriages for coarse yarns fourteen hundred-weight, and that to "put up" the latter three-quarters of the ordinary power of a horse was required.

2. See pp. 217-8. 'Labour' was frequently regarded as mere 'power' to be bought like horse-power, and in such case there was no question of labour sharing in a product and therefore gaining from its increase.

old-fashioned machinery that would last for years to come, to oppose all discounts, or all increased discounts, on the newest machinery, as otherwise their markets would be secured by new men, or by masters renewing old machinery who would naturally buy the latest "wheels."[1] Even if full prices were paid on the long mules, he argued, the masters employing them would gain, for the cost per spindle of constructing the longer mules was less, and so also was the cost of building mills to contain them. These views were undoubtedly accepted by numerous employers; some spinners at Hyde had combined with the men against an individual employer on the machinery question,[2] and in 1831 a joint committee of employers and men—which was in fact a conspiracy on the part of the small-wheel masters and the men against the possessors of large wheels [3]—was formed "to regulate the trade." The result was that the principle of discounts on the longer mules had to fight its way slowly against the opposition of many masters and of all the men. Senior, in his report as Commissioner to inquire into the need of combination laws in 1830, asserted that combinations enabled rival manufacturers to oppress their competitors by fomenting resistance to lower piecework rates which the best machinery rendered equitable, and that in consequence the motive to increase speed and introduce improved methods was extinguished. Hence Senior's astounding recommendations, that combinations, both of masters and of mens, should be suppressed by drastic legislation, and that if necessary all funds intended for the purposes of combination should be confiscated.[4] That Senior was not very far deceived as to the action of some

1. *United Trades' Co-operative Journal*, April 3rd, 1830.
2. *Ibid.*
3. Evidence of McWilliams to the Committee of 1838.
4. The report is in the Home Office Library in MS. Part of it was published in 1865 in Senior's *Historical and Philosophical Essays*, vol. ii. See also Webb's *History*, p. 125.

masters is highly probable. In 1831 the author of the pamphlet *On Combinations of Trades* could write, "The perfect liberality of sentiment, which has of late years been announced on all sides upon the subject of submission to mechanical improvement, is strongly opposed to the practice both of masters and men. It is due, however, to the workmen to state, that to interference in this case they are always encouraged by the employers. The loss to an operative by improved machinery is commonly either remote or partial; to a master it is immediate, and frequently total."[1]

The persistent opposition of the working classes and many others to mechanical improvements is traceable to fears as to their effect upon the demand for labour. "What is to become of the working people who now are, and the thousands who will be hereafter, thrown out of employment, if this system of 'speeding,' this 'double-decking,' this 'plunging' this 'self-acting,' this overwhelming principle of producing more and more is to continue?" asked Kenworthy so late as 1842.[2] There were those who thought that labour would be absolutely dispensed with, for invention might be carried so far as to supersede manual labour entirely;[3] there were others who believed that while machinery might be valuable under a co-operative system, under other circumstances it could only add to the tyranny of capital and depress wages, for the introduction of machinery would cause some displacement of labour and the discarded workers by competing against those in employment would reduce earnings; there were some, perhaps, who perceived merely the temporary evil of the readjustment of labour, and the waste involved in discarding appliances rendered antiquated before they were old, and who desired more gradual changes. More-

1. p. 38.
2. *Facts and arguments for the Ten Hours Day.*
3. *Union Pilot*, April 17th, 1830.

over, as we shall observe later, extraordinary views of over-production were current among thinking operatives and their leaders. It is not surprising, especially in view of the common ignorance then of the results of economic analysis, that even persons "above the station of labourers and working people" were prejudiced against machines and discouraged their use. A certain amount of violence and invective was only to be expected. "Who . . . does not consider the employment of machinery one of the greatest evils that ever befell the country? And who would not rejoice at a return to the rude habits of industry which once characterised the country, and under whose sway Englishmen were healthy, happy and contented?" demanded *The Union Pilot* as a prelude to its inflammatory recommendation, "Unless a great and speedy change be made in the laws which regulate machinery, we would advise the people to declare war against it—yes, 'war to the knife.'"[1]

It has been a constant complaint against machinery that it must result in the mechanising of labour. By the mechanising of labour is meant that the workman is reduced to the character of a machine. His functions are made to consist in the constant repetition of some few simple tasks, and the speed at which he works is regulated by the speed of engines. Few calls are made on his intelligence, none are made on his taste, and as the mere adjunct to machinery his life is rendered a monotonous round of drudgery. We must remark, by way of correction to this view, that machinery at least removes from the shoulders of labour the heaviest toil; and, further, that the hand processes which machinery has

1. March 17th, 1832. On the question of machinery, in addition to the quotations given above, see, further, *Observations on the use of machinery by a mechanic, 1817* (Manchester Library), and the evidence offered to the various committees on Hand-Loom Weavers, Trade and Manufacture, and Combinations—notably that of George Burgess, M.A., "economist," to the Hand-loom Weavers Committee of 1833.

displaced were on the whole mechanical in character. To cast the shuttle from hand to hand, or drive it to and fro by jerking the picking-peg, were not operations calculated to interest the people performing them. They were essentially mechanical without being exhausting.

The correct view would appear to be that machinery did not ordinarily present itself until labour had been mechanised. The task that has been reduced to a few simple movements, is one for the performance of which a mechanical device may be discovered without great difficulty, and such a device will soon appear if the task must be repeated constantly. It is extremely probable, certainly, that the complete operation will be taken over by the contrivances first invented. Hence, for a time at least, it may be necessary to link labour to machines to make up for the imperfections of machines. In mule-spinning, for instance, for a long time the carriage had to be put up by hand, if not drawn out by hand, while the winding had to be regulated by hand; and still much mechanical labour must be employed on a mule to piece broken threads. But, again, when there is a tendency for the supplementary operations to become highly mechanical—that is, to be reduced to a few simple movements—there is a tendency for machinery to assume them. The complete automatic machine is only reached as a result of a long process of mechanising labour combined with the exercise of ingenuity upon the co-ordination of movements.

The more automatic the machinery the more exacting on the whole is the call made upon the intelligence of the operatives. For automatic machines are probably complicated and possibly delicate and expensive. The operatives managing them must understand them if the best results are to be secured. The perfecting of machinery, therefore, must ultimately be accompanied by a demand for more

thoughtful, better educated and more highly paid labour. And the work of watching machinery, which is understood by those watching it, and adapting it to the changing conditions that affect its working, is clearly more interesting and humanising than the mechanical toil of the hand-workers in many of the domestic industries as they have existed and still exist in some places. Far be it from me, however, to hint that the ideal has been nearly reached, or to claim that the use of machinery has never meant the displacement of a process that was in a higher degree educative of artistic feeling or intelligence than the new method could reasonably be expected to become.

CHAPTER VI.

Factory Legislation.

The greatest evil in the early factories was the treatment of children, but from the mass of conflicting evidence that was brought forward it is not easy to frame a true conception of the actual state of affairs. Exaggeration, both from the advocates and opponents of legislative interference, was only to be expected. The exposure by R. H. Greg of some overstatements on the part of the reformers might be noted here.[1] On the other side it was actually contended on one occasion that if a child worked on the mule for twelve hours he performed only three hours labour, because (in the case of fine spinning) he pieced only for a quarter of each minute and rested the remaining three-quarters. Dr. Ure, again, wrote as if all the factory children lived in garden cities and really preferred factory work to children's play; but apparently he had seen only the works of cotton masters who, if not philanthropists, were at least humane. Certainly among the cotton masters many enlightened and benevolent men were to be found, "such as the Gregs, Ashton and Ashworth."[2] The Factory Acts were not intended for them, unless to protect them against thoughtless, coarse, or grasping rivals, whose difficulties or avarice made them inhuman task-masters. Indeed many people seem to have had their doubts as to whether children's play—were it of working-class children—ought not to be discouraged as liable to make idle men.[3]

1. *The Factory Question*, 1837.
2. Letter from Leonard Horner to N. W. Senior, published with the latter's *Letters on the Factory Act.*
3. See for instance *An enquiry into the Principles and Tendency of the Bill now pending in Parliament for imposing certain Restrictions in Cotton Factories*, 1818.

While it is impossible to believe that as a rule little children were frequently flogged to keep them at work, and while there is no evidence to show that the refinements of cruelty which are said to have been practised on Robert Blincoe[1] were typical of the treatment of children, it is certain that they were compelled to toil for a length of time which we should regard now as monstrous,[2] and that they were placed at work years before they were strong enough to bear any pressure upon their mental or physical powers. So severe were the tasks imposed upon infants of the tenderest years that cases are on record of their being maimed through mere over-strain. The assurance that no persons were employed under the age of five was naturally calculated to intensify rather than allay the agitation for reform, and Robert Owen declared to Peel's Committee that children were commonly employed at five or six, and that he had been told of children being worked in factories at three or four. Owen himself never admitted a child under ten into his mills, and the hours worked there were unusually low; Arkwright also refused to employ any person under ten. That great cruelty was practised upon children is certain; but it is by no means certain that it was the rule. More brutality was proved against foremen and operatives than against employers; but it was upon the Manchester "cotton lords" chiefly that the lash of public opinion fell most heavily.

In the woollen trade, in the West of England and Yorkshire, the state of affairs was bad; in the linen industry it was, if anything, worse; but it was in the cotton industry that the sufferings of children were greatest. In the smaller mills the conditions were at

1. *Memoir of Robert Blincoe.* This memoir was written by John Brown (not by Robert Blincoe himself). It was published in the *Lion*, edited by R. Carlile, in 1828. It was also published again in 1832 in Manchester by Doherty, the trade-union leader.

2. Thirteen to fifteen hours of work in the day were constantly being performed by young children.

their worst, particularly in those worked by water-power, for in times of flood these mills ran night and day to make up for the slack times of drought. Only in this way could they manage to compete with the steam-factories. Imagine the effect upon the children whose numbers could not be rapidly increased or diminished to suit varying needs! Many of them were parish apprentices, and over these the mill-masters exercised almost the authority of slave owners. It was no exaggeration to call them "white slaves," for they were treated merely as sources of profit; they were sometimes whipped and starved to render them tractable, and cases have been placed on record of their being chained if they attempted to escape. Some of them worked constantly in the night-shift for four or five years, that is from seven in the evening until six in the morning without meal-times.[1] In 1793 they were accorded at least some form of protection by the legislature: an Act was passed by which the justices were empowered to fine masters or mistresses who ill-used their apprentices forty shillings, but it does not seem likely that this Act was ever enforced much, if at all. There were no inspectors, and we cannot suppose that the apprentices themselves appealed frequently to the justices. Again there was the Act of 1802 (42 Geo. III., c. 73) by which the work of apprentices in cotton factories was limited to 12 hours a day, and their employment at night was forbidden unless certain exceptional circumstances prevailed. But this Act remained on the whole a dead letter; and it applied neither to those children who resided near the place of their employment, and who were

1. In the evidence taken before a Committee of the House of Lords on Peel's Bill in 1818 it was stated that night work was discontinued in Manchester in 1796. It may have ceased in 1796, but night work was quite common as late as the "thirties" (see the lists of "Midnight Robbers of the repose of the Poor," in the "Poor Man's Advocate" beginning on March 3rd, 1832). A correspondent wrote to the *United Trades Co-operative Journal* (April 3rd, 1832) that one reason for opposing night work was that it caused markets to get overstocked. This fallacy was very common.

assumed to be under the protection of their parents, nor to the children apprenticed to weavers to work in attics and cellars, since the Act made reference only to mills and factories. In the mills driven by water, which were situated as a rule in the country, many of the children engaged were parish apprentices, because a sufficiency of other children could not be procured. The number of children in demand was considerable; a plan printed in the report of the committee of 1816 showed 14 children to two men in one card-room, 17 children to two men in the other card-room, and three children to a man at spinning. Of the hours worked the following figures may be taken as typical. Of 325 cotton-spinning mills examined in 1819, 98 worked from about $72\frac{1}{2}$ or $73\frac{1}{2}$ to 82 or 93 hours a week (that is, on an average, from 12 hours and 19 minutes to 14 hours and 25 minutes a day), while the remaining 227 ran from 66 to 72 hours a week, that is on an average 11 to 12 hours daily.[1] In 1825, according to a little pamphlet published in that year, the usual hours in and about Manchester were from 6 a.m. to 8 p.m., sometimes from 5-30 a.m. to 7-30 or 8 p.m. In some cases mills closed at 4 p.m. on Saturdays. In the greater number of mills about an hour and a half were allowed for meals, but the "helps" had frequently to do some work in meal times.[2]

Child-life had certainly been abused under an earlier industrial régime. More than one aged weaver told Cooke Taylor during his tour in Lancashire, that the condition of children had been worse before the steam-factory was introduced; they were set to work "as soon as they could crawl, and their parents were the hardest of task masters." Again, it was rendered abundantly clear by the revelations made to the later Committees upon child-labour, that it

1. Appendix to Papers of the House of Lords, 24 of 1819, cx. 606.
2. *Hours of Labour, Meal-times, &c., in Manchester and its Neighbourhood.*

was not in the cotton industry alone that children were suffering from overwork and ill-treatment. Moreover, as we have seen, the life of a child was probably worse in a little cotton factory than in a big cotton factory, and there is no reason to suppose that it was any better in a hand-loom weaver's attic or cellar. But these qualifications notwithstanding, to that group of phenomena known as the industrial revolution, the overwork of children under unhealthy conditions, generally and on a large scale, must be ascribed. The competition of the factory intensified any pressure that was put upon children in the home, and it was only the new ideas as to industrial organisation—the conception of the master with his underlings who were mere "labour"—which caused human life, even that of children, to be viewed too exclusively in the economic category. Even some of the reformers appear to have found a difficulty in breaking away from the dominance of this notion.

The crowding and unhealthy conditions under which work was carried on in the early years when the aggregation of industries into compact groups was taking place, was as great an evil, probably, as the working of certain sections of the community beyond their powers of endurance. Factories collected people together to work in crowds, and eat and sleep and take their leisure in crowds; and sanitary science was an unknown form of common sense. Malignant fevers were only to be looked for. An epidemic broke out at Radcliffe in 1784 and the attention of the Justices of the County of Lancaster was called to the matter. They very wisely requested certain Manchester medical men to examine it,[1] and in the report that

1. Among those who undertook the work was Dr. Percival, who had written essays on the state of the manufacturing population in and about Manchester in 1773 and 1774. Dr. Percival assisted later in the establishment of the Manchester Literary and Philosophical Society and the Manchester Board of Health.

was presented in due course the fever was attributed to overcrowding, long hours, filth and bad ventilation.[1] The magistrates were so deeply affected by the opinions laid before them, that they resolved not to apprentice parish children to the owners of cotton mills where they had to engage in night work, or work for more than ten hours a day. The same resolution was passed by 42 magistrates at Pontefract in Session on the 18th April, 1803, except that the words "an unreasonable number of hours" took the place of "more than ten hours;"[2] and it is stated in the report of Peel's Committee (1816) that the Birmingham Magistrates determined not to send children to cotton mills at all. In 1795 the Manchester Board of Health was established.[3] Its object was to prevent the generation and propagation of disease. After a careful investigation a report was issued in 1796, in which again the cotton factory was pointed to as a hot-bed of epidemics. Moreover, it was urged that cotton factories were generally unhealthy, even if no fever appeared, and that the lives of the children working in them were ruined by the contaminating surroundings of their early years.[4] That no conspicuous improvement followed this report, however, we may gather from the fact that overcrowding, insanitary conditions and bad ventilation, were still regarded as serious dangers by Dr. Kay in 1832.[5]

A complete account of the development of factory legislation with reference to the cotton industry would be very lengthy, and of doubtful value for the purposes of this work, but something must be said of its most significant features. The condition of children in factories was

1. Hutchins and Harrison's *History of Factory Legislation*, p. 8. See also the Essay for proprietors of Cotton Mills, 1784.
2. Reports, etc., 1814-5, v., 1574.
3. Including Dr. Percival and Dr. Ferriar.
4. The report is printed in full in Hutchins and Harrison's *History*, pp. 9—11.
5. Kay's Essay on the "Moral and Physical Condition of the Working Classes of Manchester."

slightly improved by the Act of 1819 (59 Geo. III., c. 66), but although this forbade the employment of children under 9, and all night work for those under 16, it left children over 9 working 12 hours a day, exclusive of meals for which an hour and a half had to be allowed. The recovery of time lost during prohibited hours was permitted under certain restrictions. By an amending Act which immediately followed, the rules imposed under the Act of 59 Geo. III., c. 66, were in some respects relaxed. Six years later Hobhouse's bill (6 Geo. IV., c. 63) shortened the hours of work on Saturdays for all under sixteen years of age. In 1831 the Act 1 and 2 William IV., c. 39 came into force: by it the prohibitions as to the hours of work were extended to those under 18 and the prohibitions as to night work were made applicable to all under 21. But these Acts, even as far as they went, were of little avail. The majority of offences against them passed unnoticed by the law, for there were no inspectors and if operatives acted as informers they ran the risk not merely of losing their employment at the time, but of never again finding occupation in cotton factories. Moreover, in numerous cases, the operatives themselves were the offenders: there is reason to believe that some fifty per cent. of the hands under eighteen were employed by other operatives.[1] The Acts hitherto applied only to cotton mills.

So far the legislature had been timid in its requirements. The first large measure of relief was granted by the Act of 1833, which the Government had been compelled by the outcry in the country to pass even before the Commissioners appointed to correct the evidence given to the Committee of 1832 had fully reported. Of this Act the most important feature was the provision for the appoint-

1. Hutchins and Harrison, *History of Factory Legislation*, p. 37.

ment of Factory Inspectors by the Government.[1] For want of inspection previous Acts had largely failed. In addition, by this Act (3 and 4 William IV., c. 103) compulsory education for two hours a day was introduced and night-work (that is, work between 8-30 p.m. and 5-30 a.m.) was forbidden for all under 18. "Children" (those between 9 and 13) were to work only 48 hours per week and 9 hours per day, and "young persons" (those between 13 and 18) were to work not more than 69 hours per week or 12 hours a day.[2] Two full holidays a year and eight half-holidays were also made compulsory. No child, moreover, was to be allowed to work in a factory without a certificate from a surgeon or physician that he or she was of the "ordinary strength and appearance" of a child of nine years of age or over. Some difference of opinion arose as to what tests should be applied by the certifying surgeons, and at one time there was a fear that children under 9 were gaining admittance to the factories.[3] As a result of this Act children were largely displaced: 28,700 children were employed in cotton factories in 1835 and by 1838 their number was reduced to 12,300. Some mill-owners adopted a complicated relay system within the legal working day, which extended then from 5-30 a.m. to 8-30 p.m.; others managed without children for part of the day; but many discontinued the employment of children altogether.[4] The number of factory inspectors appointed, namely four, was insufficient to secure a satisfactory observance of the law, and the education provided was not infrequently vile.[5]

1. The powers of supervision given to the magistrates had produced no results.
2. For the first year after the adoption of the Act 'children' were those under eleven, and for the second year those under twelve years of age.
3. Leonard Horner advised certain measurements, and Fielden and Cowell after making experiments arrived at different averages. On this question see Von Plener's work on Factory Legislation, and also Reports, etc., 1837, I. pp. 203—10, and 1837-8, xlv. 79—85. See also, as to early failures of the system of fitness being certified by surgeons, Hutchins and Harrison's *History*, p. 73.
4. Senior's *Letters on the Factory Act*, p. 18: *Von Plener*, p. 22; Leonard Horner's Reports.
5. To-day the total number of inspectors, including assistants, in the United Kingdom is about 150, and by many this number is regarded as inadequate.

Leonard Horner in one of his reports referred to a case where the children were taught in the coal-hole by the fireman and to another case where the schoolmaster could neither read nor write.[1]

The Factory Acts after 1833 are chiefly remarkable, in respect of the hours of work, for the inclusion of all women among protected persons, and the adoption of measures for securing a more complete enforcement of the spirit of the Acts. The most important in marking a new departure was the Act of 1844 (7 Vic., c. 15), which lowered the age limit to 8, but reduced the hours of children to $6\frac{1}{2}$ and enacted that no child which had worked in the morning should work after 1 p.m., except in factories running only 10 hours a day in which children might be employed for ten hours on three alternate days. The twelve-hours working day permitted in the case of protected persons was to be reckoned from the time when any protected person started work; school regulations were made more stringent; the recovery of lost time was more rigorously controlled; the powers of inspectors were increased and fines were raised. Shortly after the passing of this Act the demand for children's labour rose again. Children had been displaced by the Act of 1833; the simpler regulations of the Act of 1844 caused their recall. Moreover, it was said that employés began to perceive that in cutting off those under 13 they were stopping the supply of skilled labour over 13.[2]

The most notable feature of the Act of 1844 was the inclusion of all women under the regulations affecting young persons. The last and fatal blow was thereby struck at night work, which was rendered illegal for all operatives who were not adult males, since, the proportion

1. *e.g.*, Leonard Horner's letter to N. W. Senior, in *Letters on the Factory Act*, p. 37; also Reports, etc., 1839, xlii. pp. 353—426.
2. Horner's Report, May, 1846.

to men of women, young persons and children, engaged in cotton factories being so large,[1] it was not economical to work with men alone.

By the Act of 1847 (10 Vic. c. 29) the hours of young persons and women were reduced at once to 11 a day and 63 a week, and after May 1st, 1848, to 10 a day and 58 a week. Relay systems in consequence began to be more generally adopted. The legal day had been left stretching from 5-30 to 8-30 p.m. and protected persons were permitted to work their legal hours at any time within this period. Many factory-masters, therefore, ran their factories the full legal day with the same men and complicated relays of protected persons. This practice was probably opposed to the intensions of the Act and certainly opposed to those of the male operatives,[2] for they desired shorter hours for themselves; and it robbed protected people of many of the benefits that had been expected from the limitation of hours, since

1. In 1847 the numbers employed in cotton factories were as follows :—

	Males.		Females.
ENGLAND.			
Under 13	10,723	.....	6,814
Between 13 and 18	33,814	.....	47,944
Above 18	78,783	.....	98,950
	123,320	.....	153,708
SCOTLAND.			
Under 13	379	.....	366
Between 13 and 18	3,046	.....	8,661
Above 18	5,796	.....	16,868
	9,221	.....	25,895
IRELAND.			
Under 13	4	.....	11
Between 13 and 18	592	.....	773
Above 18	954	.....	1,849
	1,550	.....	2,633
Total for United Kingdom	134,091	.....	182,236

That is, there were 85,533 adult males to 230,794 women, young persons, and children. For percentages of operatives of each sex and of different ages employed at various times see table at the end of the chapter.

2. In arguing against it they did not always succeed in avoiding the "lump of labour" fallacy. For instance the following is taken from the Minute Book of the Bolton Spinners' Society (March 20th, 1850)—"in the opinion of this meeting the relay or "shift system as practised by many mill-owners is the means of causing the markets to be "in an unsettled state, consequently it prevents us asking for a rise in wages."

they were kept about the mill the full legal day, though their fragments of working time when added together may have amounted only to the legal number of hours.[1] Moreover, it became impossible for the inspectors to tell whether the protected persons worked longer than the legal time or not. The Act of 1850 (13 and 14 Vic., c 54) removed this state of affairs, while adding two hours to the working week, allowing extras up to 7 p.m. and conceding a 2 o'clock Saturday. The legal day for young persons and women was fixed between 6 a.m. and 6 p.m., or in winter between 7 a.m. and 7 p.m., at the option of the employer. But since children did not fall under the Act, male adults and children were set to work outside the new legal day, though it was not easy to persuade the men to work the longer hours. In 1850 it was reported by the inspectors that in the United Kingdom as many as 3,742 children were being employed in 257 mills to assist men after women and young persons had ceased to work. Lord Ashley had urged the inclusion of the children in the Act of 1850, but his amendment was twice rejected.[2] Parliament was becoming suspicious of proposals made in the alleged interests of women and children. The practice of employing men and children at times when young persons and women were not allowed to work in the factories was suppressed by the Act 16 and 17 Vic., c. 104, which limited the labour of children to the shorter legal hours introduced by the Act of 1850.

1. The following account of the relay system was given to Lord Ashley by a correspondent from Stalybridge in 1850. It is quoted in Hutchins and Harrison's *History* (p. 102):—

"I have been to-day to see some factories where the so-called relay system is in full work, and have seen such evidence of the evils of that mode of working the people that I cannot refrain from pouring out my feelings to you. In one factory I found three hundred and thirty-five young persons and women working by relays: they are sent out at different times of the day, so as to bring their actual working to ten hours. They are sent out of the mill without any regard to the distances of their homes or the state of the weather. Some of them, I ascertained, lived two miles off, and then the half-hour, or one hour, or two hours can be turned to no good account . . . . . One manager said that 'the factory law has never worked so oppressively to the operatives' as it does now.'" (Hansard, March 14th, 1850.)

2. Hutchins and Harrison, p. 108.

Even after the two amendments of the Act of 1847 grounds were found for dissatisfaction. Employers were charged with "nibbling" time. "Nibbling" time was possible since no unmistakable external sign was made when manufacturing was being carried on during illegal hours. To prove illegal work the inspector was in effect compelled to discover an operative actually at work in the illegal hours. Leonard Horner asserted that "nibbling" was largely resorted to and that a watch was set to give notice of the approach of the inspector. It was to provide the inspectors with unmistakable indications as to whether work was proceeding or not that a restriction on the motive power was so ardently advocated. On the lines of this recommendation Cobbett presented a bill in 1855, but it failed to meet with adequate support.

The next Act of value with reference to the cotton industry was that of 1874 by which an extra half hour for rest and meals was deducted from the legal twelve hours and the age limit was raised to nine years, and after the lapse of a year to ten years. In 1891 the age limit was raised to 11 years. After 1875 all under 14 were to be regarded as children except those of 13 who had obtained certificates of proficiency from certified industrial schools. The standard of proficiency required was to be fixed from time to time by the Secretary of State with the consent of the Board of Education. The recovery of lost time after 1875 was rendered illegal, and it has remained practically illegal ever since.[1] The $56\frac{1}{2}$ hours week introduced by the Act of 1874 was diminished to $55\frac{1}{2}$ by the concession of the twelve o'clock Saturday in 1901. Other aspects of factory legislation will be dealt with later.

It will be of some interest to notice the attitude of the

1. The recovery of time lost through drought or flood by women and young persons was permitted under certain restrictions by the Act of 1878, and it is permitted to-day.

cotton operatives to the restrictions that have already been described, and to consider the effects of these restrictions. Early in the nineteenth century the cotton operatives cherished the notion of reducing their hours of labour by means of Acts of Parliament. Spinners as well as weavers looked to the State for the realisation of their wishes, though the former never appear to have put forward the large claims that were advanced by the latter. In 1818 the operative cotton spinners of Manchester petitioned Parliament for the legislative restriction of hours to ten and a half a day with nine hours only for actual work.[1] The presentation of such a petition might conceivably have been a mere casual occurrence in no wise characteristic of the working-class aspirations at the time, but that it was something more significant is certain from Doherty's evidence to the Committee of 1838. According to Doherty, the cotton spinners were working so earnestly for a Factory Act at that time that they continued their contributions for the purpose even after their union was broken up and assisted in bringing about the legislation of 1819. The support given to the Act of 1819, however, did not fully indicate the operatives' intentions, and when the agitation in the interests of children in factories first became clamorous many operatives were unaffected, lukewarm or suspicious. It became evident that the movement was not one to assist the working classes in a battle with capital, but one merely to protect children, and, if needful, even against their parents. Some operatives feared legislation, for they dreaded the privation which they supposed would result from a reduction of their children's earnings, and others were callous because they were demoralised by factory life. Gradually, however, the cotton operatives in increasing

1. Hansard, 3 S. vol. xxxvii. p. 264 (quoted from Hutchins and Harrison).

numbers were enlisted in efforts to induce the Government to interfere with the management of factories, in part because of the sympathies of the best of them with the children, in part because many hoped that regulations would be imposed in such a fashion as to limit their own work, and in part, probably, because many trusted that the scope of regulations would ultimately extend from children to adults. The Ramsey Congress had passed a resolution for the amending and extending of the Factory Acts in 1829, and a spinners' time-bill committee was in existence in 1830.[1] The Manchester Committee of the National Association for the Protection of Labour put forward a general short-time bill of its own, but at the same time gave active support to Sadler's bill, if for no other reason because it was in effect a short-time bill for all working in the textile industries; and the eight hours day was made one of the chief objects of the Society for National Regeneration.[2]

Sound as were the fundamental ideas for the realisation of which the Society for National Regeneration had been instituted, its propaganda were frequently vitiated by appeals drawn from the doctrine of the labour fund, as the "lump of labour" fallacy might be called. Thus we read in its organ:—"Reduce your numbers," says Parson Malthus, "by ceasing to beget children, and then there will be work enough for you all." "Never mind your numbers," says the Regeneration Society, "but reduce your hours of working, and then those of you who have too much work can spare a little to those who have none, and

1. Resolutions of the Manchester Congress of Spinners, 1830. Senior states in his *Letters on the Factory Act* (p. 19) that the original object of the operatives was to raise the price of their own labour when they agitated for legislation; and that after the Bill of 1833 became law many of them were greatly disappointed. Senior further asserts that the operatives tried to make this Act unworkable to compel the adoption of a ten hours legal day for all.

2. The object of the Manchester strike of 1818 had been to shorten the hours of labour as well as to raise wages. For the objects of the National Regeneration Society see *Pioneer*, December 21st, 1833.

still there will be enough for you all." [1] The week previously the same paper, in an address to the hand-loom weavers of Bolton, had laid it down as a "law of Nature" that doubling a man's work halved his wages (*i.e.*, piece rates), and that, therefore, all regulation of wages by statute must be futile. This doctrine was constantly advanced.[2] "Is there a trade in the country which does not see that the most certain and easy mode of preventing reductions of wages, and even of obtaining advances, is to *limit the quantity produced?*" it was written in the *Poor Man's Advocate* for February 25th, 1832.[3] Three weeks later this advice was proffered to the operatives:— "Let them endeavour, then, to lessen their labour that they may enjoy the more. Let them cease to 'produce' so much, that the 'demand' for their labour may increase." [4] John Fielden put forward the doubtful view that "if the change" (the reduction of hours) "were general the lesser quantity produced would command as much money as the greater quantity now does,"[5] and argued from this that time-wages would not be affected by a reduction of hours. He omitted to consider the competition of other classes of labour, and he was also silent as to the effect on real wages as a whole of a rise in the price of cotton goods. It was commonly believed by the Lancashire operatives that their long hours of labour prevented many others from getting any work at all, and caused markets to be glutted, so that goods had to be sent

1. *Herald of the Rights of Industry*, March 15th. 1834.
2. The author of *Character, Object and Effects of Trade Unions* tells us that these views were thoroughly accepted among the spinners. "The union calculated," he said, "that had the Ten-hour Bill passed, and all the present factories worked one-sixth less "time, one-sixth more mills would have been built to supply the deficient production. "The effect of this, as they fancied, would have been to cause a fresh demand for workmen, "and hence those out of employ would have been prevented from draining the pockets of "those now in work, which would render their wages really as well as nominally high. "Here we have the secret source of nine-tenths of the clamour for the Ten-hour Factory "Bill."
3. p. 45.
4. *Poor Man's Advocate*, March 17th, 1832, p. 69.
5. Torrens' *Wages and Combinations*, p. 90.

abroad at a great depreciation in their value. We must notice, however, that those who advocated shorter hours, both in this period and later, found also many sound reasons for their action in the expected effect on the health and comfort of the operatives. They perceived that high wages were of little value to those who had little time to spend them. Moreover, the mistakes made by the operatives lay not so much in their fundamental opinions as in some of the reasons given by them for holding these opinions.

How deep-seated was the desire among the cotton operatives for shorter hours for themselves is evident from the fact that when it became apparent in the autumn of 1833 that a comprehensive short-time bill could not be forced through Parliament, the textile workers of Lancashire meditated an attempt, on the advice of Lord Althorpe, to secure short-time without its assistance. An "universal" strike for an eight hours day in the cotton industry was projected for March 1st, 1834. On March 1st it was put off until June 2nd, on June 2nd it was again deferred until September 1st, and it never took place at all except for one short week at Oldham.[1] Dissatisfaction with the Act of 1833, nevertheless, was not allayed, and in 1836 short-time committees were again formed to press the enforcement of a ten-hours day by limiting the period within which machinery might run. Any Act embodying the plan of controlling the motive power would necessarily have affected all at work in the factories. The short-time committees after a brief period of activity appear to have dissolved or remained quiescent, but they were pushing their views vigorously again in the "forties," and their efforts, which were put forth as much at least in

1. Webb's *History*, pp. 117, 118, and 136; Letters to Cobbett's *Weekly Register*, reprinted in the *Pioneer*, December 21st, 1833; Hutchins and Harrison's *History*, pp. 56-7.

the interests of male adults as of women and children, were crowned with success by the passing of Fielden's ten-hours bill in 1847, after the rejection of a similar measure in 1846. The new Factory Act did not deal specifically with adult male labour, but that, as we have already observed, was not necessary.

From the arguments advanced during the movement for a reduction of hours it would seem that the views of the operatives had not undergone any fundamental changes except in respect of policy. The new policy was to claim for all women protection of the kind which had been granted previously to children and young persons only, since it had been found that it was still possible under the Act of 1833 to keep men working from 5-30 a.m. to 8-30 p.m. by using relays of protected hands, and even later if young persons and children were dispensed with. The Act of 1844 in effect conceded to men a twelve-hours day since their working alone at night was of no value. The ten-hours bill for women was regarded as a ten-hours bill for men. Among the reasons urged by the cotton operatives in favour of the bill the old mistakes stood out as before. In a circular of 1845 it was suggested that one of the objects of the Spinners' Federation should be to obtain "a more equitable adjustment or distribution of labour, by means of shortening the hours of labour."[1] It was still believed by many in the "forties" that in the shorter time some economic law would bring about the same weekly wage as was paid in the longer period,[2] without any increase in the product per hour. "We do not even hint," the spinners declared at Bolton, "that we

1. Ashton's Circulars.

2. Thus we read in *Kenworthy's Inventions and Hours of Labour*, 1842 (published in *A Selection of Facts and Arguments in favour of the Ten Hours Bill*) :—"Are the workpeople "to receive the same wages for 10½ hours labour per day as for 12? To this we may reply "that the price of labour, like all other commodities, is regulated by the supply and the "demand; and, therefore, labour, it may be said, will regulate itself; and, as shorter time "would employ more hands, there is no reason to suppose that the price of labour would "be lower." For other examples of the same type of argument see *Ten Hours Advocate*.

intend to do as much work in eleven hours as in twelve." [1] However, in the same year the Annual Report of the Federation used as an argument the successful experiments at Preston and Bolton—experiments successful in the sense that the product had not been reduced.[2] This argument was scarcely consistent with the view that the output per head should be diminished in the interests of the unemployed. No doubt the operatives were chiefly anxious to make it clear that they would not undergo additional strain in order to make up for the time lost, and they naturally welcomed any reasons in support of their demands. Whatever the facts at Preston and Bolton at that time, however, and whatever the use made of them in controversy, the operatives' experience of the shorter hours afterwards which were necessitated by the Act of 1847 did not lead them to surrender their notions as to the connection between the product and the hours of labour; for in the preamble to the rules of the Amalgamation, approved in 1860, it was laid down that " it is obvious that 60 workpeople working 75 hours per week would produce nearly as much as 75 do now working 60 hours per week, and thus from 20 to 25 per cent. of the factory population would be thrown destitute upon the streets " if 75 hours per week were worked.

Renewed agitation for a further restriction of the hours of labour had certainly begun seven or eight years before the passing of the Act of 1874. In 1867 a meeting of

1. Committee Meeting, 20th August, 1845.

2. Mr. Robert Gardner, of Preston, in a letter to his workpeople in 1845 said that they did as much work in 11 hours as in 12, and that he was going to try 10½ hours. (Published in *A Selection of Facts and Arguments in favour of the Ten Hours Bill.*) Inspector Horner visited Gardner's factory to examine into the results of the experiment. They were as follows :—

Average weekly wage earned by those working 12 hours a day between Jan. 6th and April 20th, 1844.	The average wage between 20th April and 29th June, 1844, as a result of 11 hours a day.
Spinners.....38/1	Spinners.....38/1½
Weavers.....10/1½	Weavers.....10/3¼

Moreover 96 people attended the night school instead of 27. Leonard Horner examined other experiments of the same character and reported carefully and favourably. (Reports, etc., 1845, xxv. pp. 449—57.)

delegates from both spinners and weavers, held under the presidency of the Rev. J. R. Stephens, of Chartist fame, determined to press for an universal eight-hours Bill for all factory workers.[1] The Lancashire, Yorkshire, Cheshire, and Derbyshire Factory Workers' Short-time and Arbitration Association, with its two committees, one in the north and the other in the south, then came into being. After the revival in trade the Factory Act Reform Association for concerted and continuous action by all branches of cotton operatives was established in the January of 1872, and the demand was made for a day of nine and a half hours, a half-holiday on Saturday, and total weekly hours of fifty-four at most. This demand was in a large measure conceded by the Act of 1874 which reduced the weekly hours to fifty-six and a half. Among the grounds upon which the operatives urged their claims the fallacy of the "lump of labour" could still be detected. The five reasons given for short time in the resolution of the Factory Act Reform Association, passed on the 7th of January, 1872, were[2]: that the operatives were doing more work per hour (a definite percentage more, namely 40, was asserted); that the product per hour was greater (by 70 per cent.); that the increased labour was affecting the health of the operatives; and that the increased product per hour was rendering employment irregular and causing commercial panics. The operatives were probably quite correct in their view that the proposed reduction of hours was not a reduction of work. Dr. Bridges and Mr. Holmes conducted an enquiry into the state of affairs in the textile industries on the instructions of the Local Government Board and reported in 1873 that severer and more continuous application was being exacted in the

1. Webb's *History*, p. 295.
2. Webb MSS. Textiles, i. 3.

factories, that more machinery was being attended to by each operative, that the machinery ran much faster and that these changes had been considerable since the passing of the Act of 1847.

The fight for the reduction of hours in this case, as in previous cases, was carried on "behind the women's petticoats." Although in the circular calling together the Factory Acts Reform Association,[1] in 1872, Thomas Mawdsley combatted the view that "legislative interference with male adult labour is an economic error," it was finally thought more politic to ask for a Bill making express reference only to women, young persons and children. As we have seen, all such bills necessarily affected male adults as well, since the factories could not be run economically by the men alone in view of the enormous proportion of the other classes of labour employed.

This was the last movement of any magnitude among the cotton operatives for shorter hours, apart from the demand for the twelve o'clock Saturday which has just been conceded. They disapproved of the claim for an universal eight-hours day, which was urged by a large body of the working classes in the "eighties." Their disapproval was no doubt due in a large measure to the recognition that in some trades the work was less exacting than in others, and that the change proposed would have been in many cases of too revolutionary a character.[2]

1. In 1886 the Factory Act Reform Association was revived under the title of the United Textile Factory Workers' Association, to be again disbanded after the passing of the Factory Act of 1895.

2. The plebiscite taken at the instance of the Trade Union Congress of 1888 resulted in 39,656 votes for the short day, and 67,390 against it. Of the latter votes 56,541 were cast for the cotton spinners and weavers (see Webb's *History*, p. 377 *note*). This vote referred to an universal eight-hours day. In 1895 a ballot taken on the question of an Eight-Hours Bill for factory workers resulted in

46,282 for
43,556 against

2,728 majority in favour of the measure.

Let us now enquire how the output and wages were affected by the chief Acts bearing on the hours of labour. The Act of 1802 was made applicable only to apprentices. Its limited scope—apart even from the question of how stringently it was enforced—prevented it from having any appreciable effect. It is highly improbable that the Act of 1819 caused a rise in the cost of production of cotton goods.[1] The effects of the measures of 1831, 1833 and 1844 seem to have been unimportant either way. Considerable apprehension preceded the passing of the Act of 1847;[2] mill-owners and manufacturers memorialised the Government, and Senior, among other authorities, was pessimistic as to the probable consequences of the Bill being carried.[3] The results of the Act were not immediately discoverable, for it did not come into full operation until May 1st, 1848, and bad trade at the time of its passing had caused many mills to be closed.[4] We read, however, of some employers changing their minds about the Act almost at once,[5] while the operatives remained staunch to their ideals even under the discouragement of lower wages.[6] Finally Leonard Horner,

1. The Act of 1819 which was limited to cotton factories, enacted *inter alia*, (1) that no children be employed under 9, (2) that those under 16 should not work more than 12 hours. Lord Ashley pointed out in a speech in the House of Commons, on May 10th, 1844 (see *Ten Hours' Advocate*, p. 110), that the exports of 1821-22 compared with those of 1818-9 showed, as regards cotton goods, an increase of 2½ per cent in quantity at a decrease of 2½ per cent in price (declared values), and as regards yarns, an increase of 47½ per cent in quantity at approximately the same price (declared values); but this, of course, was not conclusive.

2. This Act reduced the legal hours of women and young persons to 10 a day and 58 a week.

3. It appears scarcely worth while to enter into a lengthy analysis of the grounds of Senior's belief, but at least we may say that the errors and misunderstandings that gathered around his unfortunate expression, that the profit was made in the last hour, should warn economists against trying to be forcible by using telling phrases that must not be taken too literally.

4. Reports, etc., 1847-8, xxvi. p. 151. Very bad trade was reported in June, 1848.

5. Reports, etc., 1847-8, xxvi. p. 152.

6. Leonard Horner questioned 1,153 operatives, male and female, and of these:
   61¾ per cent preferred 10 hours.
   12¾ per cent preferred 11 hours.
   25½ per cent preferred 12 hours.
   Of the 502 women questioned:
   54½ per cent preferred 10 hours.
   10 per cent preferred 11 hours.
   34¾ per cent preferred 12 hours.

See Leonard Horner's Report for December, 1848. A greater percentage of men than women wanted short time, though the Act was for women.

who had been vigilantly on the watch for some time, reported that the alarm with which the proposal to reduce hours had been received had proved to be entirely unfounded. In many cases the output was the same as it had been when the normal working day was twelve hours, and in some of these cases even with the machinery running at the old speeds. When the output did suffer a diminution it was something much smaller than had been anticipated.[1] It was found that under the new conditions the operatives were fresher, more careful, and possessed of greater vitality, so that they could tend without additional strain machinery running at higher speeds and obtain better results from the old speeds. This, moreover, was before time had been given for the cumulative effect of increased vitality to be deeply felt. The Ten Hours Act had succeeded "beyond what the most sanguine of those who were favourable to it ventured to anticipate."[2] Passing on to the next great measure, we find that the experience of the law of 1874[3] was similar to that of the law of 1847. At first results were obscured by bad trade; then it was observed that time-wages were slightly falling; in some cases piece-rates increased a little; ultimately it was reported that the total effect of the Act on the cost of production was "trifling and insignificant."[4]

The legislation specially affecting women does not seem to have caused their displacement by men. Complete statistical evidence is unattainable, but from such figures as exist it cannot be concluded that women suffered through the differential legislation made applicable to them. One cause was no doubt that the male operatives

1. Reports, etc., 1850, xxiii. pp. 183-4, 265, 221. Leonard Horner's reports on the effects of the Act, and his analysis of the causes, are excellent.
2. Leonard Horner's Report for June, 1850.
3. By this Act a 56½ hours week for protected persons became law.
4. Reports, etc., 1876, xvi. p. 293. See also for effects, Reports, etc., 1875, xvi. p. 313 *et seq.*, and 1876. xvi. p. 301.

desired for themselves the conditions, in respect of the hours of labour, that were secured to the women by Acts of Parliament. In the matter of protection against the dangers of machinery, legislation is also differential by sex and age, and since 1891 women have been bound by law to absent themselves from the factory for four weeks at least after child-birth.[1] This salutary rule is imposed for the sake of the child as well as of the mother, and by many authorities who have considered the matter the period is regarded as too short.

Long hours were not the only evils suffered by the early workers in cotton factories. There were also dangers arising from the use of machinery and the unhealthiness of the surroundings. The first Act in which an attempt was made to reduce the dangers of machinery by regulations as to its use and the fencing of certain parts was that of 1844. It was in response to the efforts put forth by the Factory Inspectors some nine years later to carry out drastically the intentions of the Act of 1844 in the way of protecting life and limb that the Factory Law Amendment Association was formed at Manchester. In 1855 it merged into the National Association of Factory Occupiers. Twenty years had seen such extensions of Government regulations, which had a special reference to Lancashire and the vicinity, that a reaction was but natural, particularly in view of the indiscriminating way in which factory-masters were denounced as a class by many of the advocates of these extensions. We must not follow here the steps by which increasing immunity from the dangers involved in the use of machinery has been secured; suffice it to say that to-day by regulations as to fencing, the position of self-acting mules and the cleaning of machinery in motion, operatives in factories are hedged

1. Some restrictions had been proposed by Dr. Bridges and Mr. Holmes in 1873.

off from most dangers that are avoidable. The curtailment by statute of the actions of operatives with a view to their safety applies with a diminishing degree of restrictiveness to children, young persons, women and male adults, because children and young persons are less careful than adults, women are weaker and less agile than men, and women's clothes are more liable to be caught than men's. Male adults are prohibited only from being "in the space between the fixed and traversing part of a self-acting machine unless the machine is stopped with the traversing part on the outward run." It is urged by many that all operatives should be prohibited from cleaning machinery in motion and actually about half the firms in the cotton industry have factory rules to this effect. The law at present is that no children may clean any machinery in motion, that no young persons may clean any dangerous machinery when it is in motion, and that no women or young persons may clean mill-gearing in motion. All accidents, except those of a trivial character, must be immediately notified to the inspector and those causing death or produced by machinery, together with certain other accidents, must be notified also to the certifying surgeon of the district.[1] Among the accidents for the prevention of which regulations are made by statute are those arising from fire. As to the machinery or buildings that are in a condition which is threatening to life and limb, a court of summary jurisdiction may prohibit their use until the cause of danger is repaired, and an interim ban upon their use may be pronounced by the court, or a justice of the peace, if the danger is imminent. All dangerous machinery must be fenced. Whether machinery is to be regarded as dangerous or not is a question to be determined by

1. As the surgeon is not required to give aid there is some doubt as to the value of this provision.

the magistrates in each case. This arrangement is said not to work satisfactorily as a general rule; but a great deal has been effected recently under the influence of the inspectors with regard to the fencing of machinery without cases being taken into court. Prior to 1891 the question of the dangerous character of any particular part of machinery had to be determined by arbitration.

Efforts have not been lacking to screw up the level of healthy conditions required in factories, but in numerous cases the state of affairs is still far from ideal.[1] Existing imperfections must be in some degree ascribed to the absence of an enlightened and effective public opinion. The periodic cleansing of factories, which has been compelled from the earliest times, is rigidly enforced. In card-rooms cotton operatives suffer from the presence of dust and particles of cotton in the air. The removal of these, so far as it is possible, is required, but it is only just beginning to be realised that they should be carried away without the atmosphere being charged with them first. The practice of injecting steam into sheds to facilitate weaving is common; the quantity of steaming increased after an excessive sizing of warps had been encouraged by the use of the short-staple cotton which was introduced during the American Civil War and largely employed afterwards. The Legislature dealt with this matter, imposing, under the Cotton Cloth Factories Act of 1889, maximum limits of humidity for given temperatures and the maximum proportion of carbon dioxide to be allowed in the atmosphere in humidified weaving-sheds.

It should be noted that work in a factory which is run in strict accordance with the law, even in the districts where its administration is best, may be far less healthy

1. The Local Authorities are responsible where the Public Health Act of 1890 is adopted; in other cases the Factory Inspectors, under Section 9 of the present Act. Even when the Local Authorities are responsible the Inspectors may interfere in case of default. The absence of an uniform standard is to be deplored. The Public Health Act of 1890 has been adopted by most local authorities in the cotton districts.

and comfortable than it might be. Though protected persons are guarded against the dangers arising from machinery by the Factory Acts, there is nothing in these Acts to prevent the raising, pushing or carrying of excessive weights by women, young persons and children, nor are there any regulations as to the lighting of factories. The provision of properly warmed and ventilated cloak-rooms (which is desirable in all cases and so essential in the case of damp weaving-sheds), and of dining-rooms and washing-rooms, is still unusual.[1]

Assuming the State regulation of industry in some degree to be desirable, there still remains the question as to its form. Laws to be obeyed must be known and understood. They must, therefore, be simple, invariable in their application, and comparatively unchanging. If they are complicated, and subject to exceptions and provisos, so that one rule applies to one factory and another rule to another factory, and the rule is not even always the same for the same factory, the law will be constantly broken through ignorance. Moreover, the law will be difficult to enforce, because, if its variations are many, breaches of it may not infrequently pass unobserved. A few common rules of wide application which alter seldom are, therefore, upon these grounds desirable. But upon other grounds they are undesirable. To avoid doubt as to the meaning of the law and litigation, rules must be definite and detailed, and, since industry presents a diversity of aspects, they must be multifarious. Further, industrial activities are constantly readjusting themselves to meet new conditions of demand and production. On these grounds the Secretary of State was empowered by the Factory Act of 1867, which brought a large number of new industries under control, to issue Orders modifying

1. The provision of suitable cloak-rooms in all factories erected after February 2nd, 1898, is compulsory.

within limits the provisions of the Act when it appeared to him needful. Similar powers were given to the Secretary of State under later Acts. It was felt that regulation by Order was more rapidly modifiable than regulation by Statute, and that much regulation should be capable of almost instantaneous application and removal. In 1878, however, in consequence of complaints, made by the Commissioners appointed to report upon the working of the Factory and Workshop Acts, that "when modifications are accumulated in such number and variety as in the present Factory Acts, the whole law assumes a character of complexity and difficulty which is apt to be taken to justify its neglect," the power of the Secretary of State was greatly curtailed and a higher degree of uniformity was introduced into the system of regulation.[1] By the Act of 1901 the powers of the Secretary of State are limited pretty much as they were in 1878. The permissible modifications of the law, by way of extending, varying or relaxing regulations were defined, and it was enacted that modifications could be made applicable only to trades and processes and not to particular businesses. The Orders of the Secretary of State are required to be laid before both Houses; and within forty days of any Order being so presented it may be annulled on the resolution of either House. The degrees of humidity allowed under the Cotton Cloth Factories Act, we may notice, are made variable under the Act of 1901.[2]

1. For details see Hutchins and Harrison, pp. 318-9. The question is one of little importance to the cotton industry.

2. The administration of the law is a matter with which we need scarcely concern ourselves in this chapter, and I cannot pretend to have made any examination of the matter, but one or two points may be noted. Since 1825 the principle of excluding certain relatives of the defendant has been put in practice. Under the existing law fathers, sons, and brothers of accused persons are not qualified to act as members of the Court, nor are persons engaged in the same trade as the defendant, or officers of any association of persons so engaged. It must be remembered, however, that many trades are very similar to one another, and that an offender may, therefore, be tried by closely interested parties. This could not easily be avoided, under the existing magisterial system, where there is no stipendiary magistrate, and one must trust to the influence of public spirit and public opinion as a corrective. Offenders may escape with so light a fine and so little stigma, as to benefit from having broken the law; but the inadequacy of penalties is not to-day so frequent a source of complaint as it was in earlier days of Factory Legislation, especially when one fine only was imposed for many offences of the same character committed by one person on one day.

Operatives Employed in Cotton Factories in the United Kingdom and Percentages of Each Class (from Returns of Factory Inspectors).

	1835	1838	1847	1850	1856	1862	1867	1870	1874	1878	1885	1890	1895
Male and Female under 13, or half-timers ...	13·2	4·75	5·8	4·6	6·5	8·8	10·4	9·6	14·0	12·8	9·9	9·1	5·8
Male, 13 to 18 ...	12·5	16·6	11·8	11·2	10·3	9·1	8·6	8·5	8·0	7·2	7·9	8·2	7·9
Male, over 18 ...	26·4	24·9	27·1	28·7	27·4	26·4	26·0	26·0	24·1	25·3	26·4	26·9	27·6
Female, over 13 ...	47·9	53.8	55·3	55·5	55·8	55·7	55·0	55·9	53·9	54·7	55·8	55·8	58·7
Total number of Cotton Operatives	*218,000	259,500	316,400	331,000	379,300	451·600	401,100	450,100	479,600	483,000	504,100	528,800	538,900

* Inspector Rickards gave two totals for his district. If the higher be taken this number becomes 219,100.

CHAPTER VII.

Development in Marketing.

The cotton industry, as a whole, is flanked by two markets, that in raw cotton and that in fabrics; and between its two chief branches lies the yarn market. These markets we shall now analyse, commencing with the cotton market.

In early days cotton was imported by the Liverpool dealer, either as an agent for American firms or at his own risk. He sold—sometimes by private treaty, sometimes by auction, and sometimes through brokers—to Manchester dealers for the most part, who in turn sold to the spinners and frequently gave long credit. Some dealers were themselves importers, and some few spinners bought directly, or through a broker, from the Liverpool importer; but by the beginning of the nineteenth century it was customary for the spinner to buy from the Manchester dealer. The Manchester dealer supplied himself, through a buying broker, from a Liverpool importer, who himself dealt, as a rule, through a selling broker. It should be observed that up to 1789 the leading cotton mart was not in Liverpool but in London, and that it was not until 1795 that Liverpool assumed an undisputed leadership.[1] Very shortly after, Liverpool became the only cotton market in England. As the market at Liverpool increased in size, partly by withdrawing business from London, partly through the growth of the industry, numbers of brokers appeared who dealt only in cotton. Previously they had done business in

1. Ellison, *The Cotton Trade of Great Britain*, p. 170-1. On all the above, and what follows, see his work, especially pp. 165-186, and pp. 272-296.

many other commodities—generally colonial produce—and sometimes they had engaged also in other trades. In 1815 there were upwards of 100 cotton dealers in Manchester. Their numbers declined as mills increased in size, and as the spinners, by acquiring a greater control over capital, were relieved from their dependence on the dealers for credit, and enabled to buy in Liverpool. The Manchester dealers vigorously resisted the disposition on the part of the spinners to pass them over in purchasing cotton, and some of them refused to deal with Liverpool brokers who did business direct with spinners. After the opening of the Manchester and Liverpool Railway, which lessened the difficulties in the way of spinners buying in Liverpool, the Manchester dealers rapidly disappeared, or were transformed into brokers buying for their old customers on commission.

As an improvement in the means of transport at the end of the first quarter of the nineteenth century forced the Manchester cotton market back into Liverpool, so another improvement of the same general character in recent years has transferred a part of the Liverpool cotton market back to Manchester. In each case the new arrangement was brought about, to a large extent, by economies in the cost of handling cotton. It was obviously cheaper to send cotton direct from Liverpool to the mills than to send it first to a market at Manchester; and after the opening of the Manchester and Liverpool railway no great obstacles had to be surmounted by those who wished to make their purchases in Liverpool. But after the opening of the Manchester Ship Canal it was rendered cheaper to bring cotton, for Manchester and many other spinning centres, direct to Manchester than to send it first to a market at Liverpool. The result is that, while 64,400 bales came direct to Manchester in

1894–5, no less than 395,600 came direct in 1898–9, and 627,700 in 1902–3; roughly, about one-sixth of the total imports now arrive by the canal. For many reasons (partly connected with the conveniences for shipping, partly connected with the conveniences offered to spinners) Liverpool maintains its position as the chief market. In 1894 the Manchester Cotton Association was formed with the following objects:—

"(1) To frame suitable and authoritative forms of contract, and to make rules and regulations for the proper conduct of the trade.

"(2) To supervise and facilitate the delivery of the importations of cotton at the Manchester Docks to the various consignees.

"(3) To provide and maintain trustworthy standards of classification.

"(4) To procure and disseminate useful information on all subjects pertaining to the trade.

"(5) To act in concert with Chambers of Commerce and other bodies throughout the world for mutual protection.

"(6) To establish a market for cotton at Manchester."

The Manchester market is now attended by brokers from Liverpool, but its organisation is primitive compared with that of the Liverpool market.

The disappearance of the Manchester cotton market early in the nineteenth century established more firmly the custom of buying through brokers.[1] The Lancashire spinner buying in Liverpool could not conduct business with a Liverpool importer, or broker, as well as he could

1. In 1823 a Parliamentary Committee reported that there are "few merchants who are not factors, and few factors who are not also merchants, trading on their own account." The evidence given to this Committee showed that trade was being hampered because advances to agents were not protected. As a result of the report of the Committee the Act 4, Geo. IV., c. 18 (repealed by 52-3 Vic., c. 45, s. 14), was passed. This Act gave consignees a lien on goods to the amount of their advances in all cases, and protected those to whom they might pledge their bills of lading to the amount of the advances.

with one of the Manchester dealers, who had perhaps financed him and with whom he was upon a friendly footing. He could not deal upon equal terms with an expert who thoroughly knew the market (which now contained more firms and more qualities of cotton), and who did business in the spirit of nineteenth century commerce; nor had he time when his mill became larger. The position of the brokers, moreover, was still further established by the drop in commissions from 1 to $\frac{1}{2}$ per cent. which followed on the custom of selling by sample, a custom rendered possible by the more careful cleaning and grading of cotton.[1]

It is needless to explain in detail why buying and selling became independent businesses. One spinner could not provide full occupation for a specialist as a cotton-buyer; and the importer in the old days, when he traded in a multiplicity of commodities, could not find full employment for a seller of cotton only. If many of the firms in one class of business are very much alike, and if the goods in which they deal are graded, the evolution of buying and selling as independent and self-directing functions must sooner or later take place, since specialism carries with it higher efficiency and greater economy.

It is the business of both buying brokers and selling brokers to know the same things, but not to impart their knowledge, for the object of each is to get the best terms possible from the others. There is, therefore, conflict. A brief comparison of the cotton market, as it is depicted above, with the most highly-developed market we know, the Stock Exchange, will give some idea of the manner in which conflict may be removed under certain conditions. The centre and pivot, so to speak, of the Stock Exchange

1. Ellison, especially pp. 174-5.

is the jobber or dealer. His function is to know everything as to demand and supply of all property bought and sold in his domain. The ideal jobber is the man without bias one way or the other, and without interest in any of the concerns in the stock of which he deals, who centres in himself all the economic forces of the market, and whose judgment is their resultant. He will buy anything in the market, and sell anything, at prices which he quotes before knowing whether he is required to buy or to sell.[1] The public deals with the jobber through a broker, who both buys and sells on commission. In this state of affairs we see the effect of further development. The broker who merely buys performs two distinct functions: he is an agent with a general knowledge of the market, and an economic force expressing demand. The broker who merely sells also performs two distinct functions: he is an agent with a general knowledge of the market, and an economic force expressing supply. As agents their functions are one, as accumulators of economic forces they are in vehement opposition. The conflicting interests are brought together in the jobber, a person whose office is compounded of the buying and selling offices of the brokers, and who, therefore, expresses both demand and supply. Through the appearance of the jobber, brokers are deprived of their differences; they become of one nature, and operate alike merely as agents. But why, it may be asked, does the business of the broker survive at all, since the existence of demand and supply in one person implies that buyers and sellers no longer need fighting representatives? Because, it may be replied, buyers and sellers need information, and also because the size and extent of the market necessitates some organisation. Many persons are

1. There is a slight difference between the two prices, "the turn," which represents his remuneration.

ignorant of the methods employed on the Stock Exchange, many are miles away from it; besides, the crowd of would-be buyers and sellers is so thick that the market would be choked if they all came into direct contact with a jobber, or it would become so large that different prices might rule in different spots at one time. These difficulties are met by the existence of brokers, each of whom represents big streams of demand and supply made up of many tributaries.

Very few markets can develop even to the extent to which the cotton market has developed. With a view to understanding what has taken place in the cotton market, and the differences between it and the other two general markets of the cotton trade, it will be of value here to discuss briefly the general conditions of development. Roughly expressed, the following may be taken as the most important: —

(1) That the commodity should satisfy a demand which is constant over a fair period and is not given to violent fluctuation; and that it should be elastic rather than inelastic at the point about which the marginal demand[1] oscillates, so that increased or decreased supplies are not followed by very large variations in price.[2] To this condition must be added that supplies should not be subject to violent and entirely unforeseen fluctuations.

(2) That there should be an accurate description or "grading" of the commodity dealt in, so that inspection by each buyer may not be necessary.

1. The "marginal demand" is the demand of the buyer who is just induced, and only just induced, to buy. For a complete definition of "margin," "marginal demand," and so forth, the reader must be referred to Professor Marshall's *Principles of Economics*.

2. The more inelastic the demand, of course, the greater the success attending corners. If a fall in price is followed by increased total takings, demand is said to have an elasticity greater than 1—it is comparatively elastic—but if a fall in price is followed by diminished total takings the elasticity of demand is said to be less than 1—demand is comparatively inelastic.

(3) That full and immediate information about facts affecting prices be made public.

(4) That there should be facilities for bargaining and payment.

If the first condition is not fulfilled dealings in the commodity over longer periods become so highly speculative—the dealer standing to win or lose such large sums in proportion to his outlay—that many experts are kept out of the market. The third condition, in some degree, is of course essential to scientific dealing; and it is only scientific dealing which will tend to bring about such a correspondence between supplies and demand as will result in a maximum of economic advantage. When many transactions take place between market specialists, all of whom have the fullest attainable knowledge and are capable of forming judgments as to supplies from facts which frequently seem irrelevant, or quite inconclusive, to the ordinary man; then, supposing the absence of combination, the scale of production tends to be determined rationally and roughly in accordance with public advantage. But transactions between those in complete ignorance are games of chance, from which advantage cannot reasonably be expected. Finally, the second and fourth conditions are necessary if dealing is to be cheap and rapid. Let us consider next the extent to which these conditions are realised in the cotton market.

1. In dealing with the demand for cotton we have to take into consideration both the long and the short periods, the difference between which consists in the fact that time is supposed to be given in the former for the wearing out of fabrics, whereas in the latter it is not. Let us begin with the long period. The demand for cotton, unlike that for a thing of fashion, is fairly constant; and it is more constant

than the demand for particular yarns or calicoes, since it lies further from the finished commodity in the productive process, and so can be put to a greater variety of uses. The demands for numerous consumable commodities resolve themselves ultimately into demands for cotton among other goods and services. A decrease in the demand for one of these consumable goods tends to be counterbalanced by an increase in the demand for another, so the demand for cotton is disposed, for this reason, to be more steady than any one of the demands which are transmitted. The demand curve lying about the point of equilibrium seems to be moderately elastic; though higher up, if one may so express it, it becomes less elastic, since many cotton goods are to a great extent necessaries. Now, turning to the short-period curve, we observe, firstly, that normally it will be constant in form. It will, moreover, tend to be more elastic at all points above the margin than the long-period curve, because if prices rise people will wear out their old cotton fabrics thoroughly before they purchase new ones; and at or below the normal margin it will also be highly elastic, because consumers are always ready for the smallest bargains, since a durable commodity which is the object of a constant demand, though bought to-day, may be used to-morrow, or even far in the future.

On the side of supply we find a combination of favourable and unfavourable conditions. Since the supply of cotton is largely dependent on the seasons, it varies considerably from year to year; but this variation is kept down by the fact that cotton is produced in bulk in more than one part of America and in Egypt and India. It is true that the cottons of different places are frequently substitutes only in the slightest degree, though in some cases they are fairly good substitutes. While, however, the annual output is dependent on nature, and so given to great

variations in quantity, it must be remembered that the amount of the crop can be roughly estimated, and that existing stocks are known with fair accuracy. Weekly supplies could only be affected by a war checking export and resulting in the destruction of some of the crop, or by a "corner," which is not easily managed because of the enormous value of the stock of cotton, and because manufacture can partially cease for a short period, inasmuch as cotton goods do not satisfy a pressing want which recurs at very short intervals. The American Agricultural Bureau, we should observe, publishes reports on the state of the crop at the beginning of June, July, August, September and October of each year, and the area under cultivation is always known with fair accuracy. In addition a number of unofficial estimates are made by experts before the crop is harvested.

2. The second condition laid down above was "grading." This was unknown at the beginning of the last century; the cotton was then sold in bales on inspection, and generally by auction. The extended use of cotton, however, soon led to more careful cultivation and harvesting, by which a greater uniformity in the various bales of one crop, and from one district, was secured. Moreover, the invention of the saw gin by Eli Whitney, in 1793, introduced a system of more thorough cleansing, more discriminating selection, and more uniform classification. In consequence it became possible early in the century to sell by sample, and as a result brokerage fell to $\frac{1}{2}$ per cent. The grading of cotton succeeded, but it was probably not until the North and South War, which opened the door to gigantic speculative transactions, that it became of any great importance as a basis for dealings. At any rate, it was not before 1863 that the Cotton Association found it necessary to draw up rules regulating the disputes which

arose out of dealings in "futures." After the war, on the substitution of free labour for slave labour in the cotton fields and factories in the Southern States, a more delicate grading was attempted and attained. But there are still appreciable differences between the cottons certified as of the same quality, which render buying by sample necessary in many cases, and therefore prevent the structure of the London Stock Exchange from being realised in the cotton market. How perfect grading may ultimately become it is impossible to say. Grades are fixed in America, and also by the Liverpool Cotton Association, but the standards of grades purporting to be the same are not identical in the two markets.

3. We may now pass on to the third essential, namely, the collection and spread of information. During the last century the amount and the accuracy of information at the disposal of dealers increased enormously; moreover, the time elapsing between an event and a general knowledge of the event has dwindled to a small fraction of what it used to be. Mr. Ellison tells us that at the close of the eighteenth century there was a tacit understanding amongst brokers to supply each other with information, but no printed circulars existed, except the private lists of monthly prices current of all kinds of produce. Particulars of the business done in cotton used to be forwarded in letters by the brokers to their constituents. In 1805 Messrs. Ewart and Rutson began to issue a weekly account of the sales and imports of cotton, and in 1808 there were three such weekly circulars, though only one, Mr. Hope's, was devoted exclusively to cotton. The first associated circular of any importance was issued in 1832. Several firms subscribed to it, and each week particulars of the business done in cotton were collected by certain brokers, appointed for the purpose at a weekly meeting, which gave

rise ultimately to the Cotton Brokers' Association, founded in 1841. This Association was influential in fixing and expanding an unwritten code of professional etiquette in dealing, which did much to perfect the cotton market. The further advance in the diffusion of information is best described in Mr. Ellison's own words: "Down to 1864 the leading firms continued to issue weekly market reports, but in that year the Association commenced the publication of an associated circular. This was followed in the same year by the Daily Table of sales and imports, which, in 1874, was succeeded by the present more complete Daily Circular. To these publications were at various times added the annual report, issued in December, the American crop report, issued in September, and the daily advices by cable from America, issued every morning."[1] A reference to the estimates formed of the crop has already been made.[2]

4. Facilities for bargaining and payment have been mentioned as forming the fourth group of essentials for a developed market. With these we shall deal more in detail later, but we may observe here that the first step was taken by the formation of the Cotton Brokers' Association in 1841.

The laying of the Atlantic cable, and the perfecting of the postal and telegraphic networks which succeeded this event, threw the English and American cotton markets together, much as the opening of the Manchester and Liverpool Railway had forced the Manchester market back into the market at Liverpool. Naturally a tendency appeared for brokers to do business direct with American factors by cable. A similar movement took place in America. By degrees the merchant at the ports was passed

1. *The Cotton Trade of Great Britain*, Thomas Ellison, p. 186.
2. p. 121.

over, because improved methods of communication rendered possible direct dealing with the producer or the interior factor.[1] As some indication of the extent of this movement, Hammond gives figures which show, for five leading American ports between 1874 and 1896, a large diminution in the actual quantity of annual sales of spot cotton, in spite of the increase in the bulk of the trade.[2] In England the less conservative of the buying brokers followed the example of the selling brokers in acting occasionally as dealers, and those of the old importers who did not retaliate by dispensing with brokers altogether were penalised in their dealings by the amount of broker's commission. The larger houses, however, easily held their own, and no further change might have taken place for a long time had it not been for the rapidly expanding bulk of the dealings in futures and their increasing importance. So vast and complicated did these operations become that in 1876 the Cotton Clearing House had to be established to unravel the tangle of purchases and sales which arrivals frequently found awaiting them. "Futures" then became an impossibility outside the Clearing House, from which the old importer was jealously excluded. Further, the shifting of some risks one step back (which the new method of moving the American crop brought with it) had by this time rendered "futures" a necessity to the dealer. He bought by telegraph, and protected himself against loss by selling "futures." And so, on the foundation of the Cotton Clearing House, some importers were forced to obtain from a private club which had black-balled them, and at a monopoly price, that which had become almost a necessity of their commercial existence. They were thereby victimised to the

1. Hammond, *Cotton Culture and Trade*, pp. 294-8.
2. p. 298.

extent of one per cent. on all their dealings. The position was absurd, and, as the brokers refused to hear reason, the importers sought the only remedy left and founded a club of their own, the Liverpool Cotton Exchange. A keen rivalry, in which each party suffered more than either gained, ended in the absorption of both institutions in a new foundation, the Liverpool Cotton Association, and the admission of the old importers to the Clearing House.

The market disturbances created by trans-oceanic telegraphy left the spinners deserted by their agents. Finally some of the spinners protected themselves by forming the Cotton Buying Company, a limited company which consisted originally of 20 to 30 limited cotton-spinning companies and represents to-day 5,750,000 spindles distributed among 91 firms. Its object is to bring its members into direct touch with the cotton merchants and enable them to save on brokerage. In resisting the tendency to displace one class of middlemen, exhibited in the foundation of the Cotton Buying Company, brokers were attracted back to the side of the spinners. The position, in brief, was as follows. Nearly enough concentrated buying and selling upon "grades" had appeared for market prices to emerge, but not quite enough. There was, in consequence, little need in many cases for spinners and cotton dealers to attach to themselves expert representatives, but there was some need, since conditions were not fully favourable for the broker to become a jobber. Economic forces, therefore, brought about a virtual compromise. Many brokers openly walked the market as importers, jobbers and brokers, and the spinner was protected merely by the understanding that his agent was never to figure as a principal in a broking transaction or as broker for the seller in the same transaction.

The new method of marketing, which transformed

brokers into dealers, resulted in a redistribution of risks. Some were split up into smaller parts and shared by the multitudes speculating in cotton, as we shall see more clearly in the next paragraph. Others were shifted back to America. The latter movement needs some explanation, as the laying of the cable, while it rendered some change possible, by no means necessitated that which actually took place. Perhaps the reason may be expressed in this way. Risks tend to settle where they can be borne most easily, and the heavier the risks the more rapidly do they drift to their place of final settlement. The American dealer is in the most favourable position for acquiring the highest expert knowledge. Many risks, however, remain with the cultivator, and others are handed right on to the retailers of finished commodities. But a great deal of risk is shared, as it has been remarked already, by those who deal on the Liverpool Cotton Market. Many traders import cotton and sell "futures" as a hedge. These "futures" exist merely for the distribution of risks among those whose knowledge enables them to make a living out of bearing them—and incidentally among those whose ignorance renders them incapable of doing so. They must be distinguished from the "futures" which consist in the order for future delivery, at a price fixed when the contract is made, placed by the spinner, who has entered into contracts for future deliveries of yarn, in order to protect himself against a possible rise in the price of cotton, which might turn a foreseen profit into a loss. This sort of contract is known as the "deferred delivery;" the cotton (so many bales each month) is at the call of the buyer. The "deferred deliveries" constitute real purchases involving the future, and form the basis of many of the "futures" circulating on the Cotton Market; though, indeed, the "futures" on the Exchange constitute,

in turn, the basis of the former, since, were it not for the possibility of hedging which " futures " provide when the dealer distrusts his own judgment or feels that he is bearing too many risks, persons would be less ready to sell large quantities of a commodity which they did not possess. It is desirable that the spinner should be able to buy at a present price cotton for future delivery, so that he may accept with safety orders for yarn deliveries of which may be spread widely over the future. The spinner is thereby spared commercial anxieties, and left more free for the important work of selecting and organising his factors in production. Moreover, buying and selling by experts should tend to steady prices.[1] And when manufacturers have to face the risks of two markets, as well as the problem of how to produce at the least cost, those who survive under the test of competition are not of necessity the most capable at the purely industrial work. Spinners have not yet completely emancipated themselves from the risks connected with the prices of raw material. The modern tendency, however, is for the spinner to shrink from them as much as possible.

Contracts in " futures " always refer to a given range of grades, and to quantities which are multiples of 100 bales. American futures are for " Middling," and nothing below " Low Middling " could be tendered in fulfilment of such contract until October, 1901, when it was made allowable to offer lower-grade Upland cottons. Egyptian futures are for " Fully Good Fair," and anything above or below

1. Whether operations in 'futures' (apart from 'corners') tend to steady prices in view of the deliberate creation of false impressions by 'bulling' and 'bearing' operations and of the speculations in 'futures' by persons without much experience of the market, it is extremely difficult to say for certain, for such persons may be subject to panics and undue excitement. Undoubted conclusions cannot be founded on a comparison of the present with the days before 'futures' were at all common, since all conditions were so different forty or fifty years ago, nor on a comparison of different markets, since the prices in markets without 'futures' to-day are not independent of the prices in markets with 'futures,' and the nature of demand is not the same in all markets. A close analysis of the relations between 'spot' prices and 'future' prices would yield some evidence if these prices could be taken as independent variables in a sufficient degree to enable their influences upon each other to be adequately traced. For such a kind of analysis see the article by the author and Mr. Douglas Knoop in the *Economic Journal* for December, 1904. My view is that apart from corners, which cannot be at all frequent, dealings in 'futures' are steadying prices.

on allowances. The prices for the cotton that is tendered are settled by arbitration. It must not be overlooked that "futures" do not provide a perfect hedge, because they refer, not to specific grades, but to ranges of grades, and any quality within the recognised range is tenderable, on allowances fixed by arbitration. Hence, if a broker has contracted to supply a mill with a specific quality of cotton at some time in the future he has to stand the risk (whether he hedges by buying "futures" or not) of the price of this particular quality advancing in a greater proportion than the prices of other qualities. In short, the seller is protected, through a purchase of "futures," against a general advance in price but not against a special rise peculiar to the one quality of cotton which he has sold, as such kind of cotton need not be (and in the case in question will not be) delivered against the "future" which he has purchased. "Futures" in the cotton market apply each to two months. Thus there are "May-June" futures, "June-July" futures, and so forth. They are quoted for some ten months ahead. The seller may deliver on the 1st of the first month mentioned and must deliver before the last day of the second month.

A brief mention must be made of options, though they are not much used on the English cotton market. An option involves a "put" or a "call," or both. A "put" is a power to sell, and a "call" a power to buy, at some future date at a price fixed when the power is bought. An example of a double option will make the case clear. Suppose I have bought "August option" for 100 bales at the current price, which is, say, $\frac{1}{4}$d. a pound, that is £50 for the 100 bales. Then, before the 1st of August, I can declare, and on the 1st of August I must declare, whether I am to be understood to have bought on the day on which

I paid my £50, or to have sold. If the cotton has gone up I declare that I bought, and I can then re-sell at the price of the day. The original offerer of the option has £50 in hand with which to pay, or partly pay, the difference between the value on the day when the transaction was opened and that on the day when it closed. If the market has fluctuated either way more than ½d. in that period, I gain, and if not, the option offerer gains on the transactions with me. A "single" option differs only in the fact that the buyer must declare at the time the transaction is made whether he buys a "put" or a "call." Options, therefore, are also means of spreading or shifting risks. They enable those who distrust their own judgment to insure against the market proving unfavourable at a time when they must be buying or selling. At the same time they enable people with the requisite powers to make a living by acquiring the special knowledge and judgment through which they may undertake risks, and gain on the whole. And, needless to say, they unfortunately give opportunities to mere speculators, who trust to chance, and whose operations are not guided by a trained judgment and special knowledge. The essential difference between the "future" and the "option" is simple. In buying a "future" you may buy certainty and have done with chance: in buying an "option" you insure against disaster, but retain the chance of profiting from luck. The chance of good luck is of course twice as great in the case of a joint "put" and "call" as in the case of one only. The holder of a double option must gain on the transaction which closes it; but whether he actually gains or loses depends upon the price paid for the privilege. It must not be concluded that if I gain from having purchased a single or double option the seller must lose. In respect of transactions with me alone there is a loss on paper, but

the cotton that the seller may be compelled to deliver to me below market price he may have bought in the past, in the form of a future possibly, at a price lower even than that at which he sells, or at any rate at a price which leaves him with a profit, the money received by him for the option being taken into account. Or again, cotton taken by him from me at the low price may have been sold beforehand by him elsewhere at a higher price. Having sold an option a dealer watches the cotton market closely, in view of his obligation, and so operates as to be left with a profit, if possible, whether the buyer gains or not.

The "straddle" is another operation peculiar to developed markets which takes place frequently in the cotton market. It is a speculation on the differences between the prices of different qualities of cotton or between the prices of "futures" with different periods to run. Thus, to take an example of the latter, if April-May "futures" stand at 4d. and May-June "futures" at 4 10-64d. by buying the former and selling the latter a speculator will gain provided that the difference between the two prices becomes less than 10-64d. If this difference increases the "straddler" would lose in the case supposed; but he would have gained had he sold April-May "futures" and bought those for May-June. The ratios between the prices of "futures" with different periods to run, it must be explained, are constantly altering with changes in the market. Sometimes the differences will be great and sometimes small; and there is no universal rule, apart from the condition of the market, as to which "future" will have the higher price.[1] The ratios between the prices of the various qualities of cotton

1. An explanation of the relative prices of the various futures will be found in a paper by the author and Mr. Douglas Knoop, on *Anticipation in the Cotton Market*, in the *Economic Journal*, Vol. xiv. Generally speaking, we may say that the prices of the various 'futures' are determined by the present state of the market in relation to anticipations as to its states at different times in the future.

alter frequently and considerably. Blind "straddling" is sheer gambling and it damages the market in the way that all other blind speculation damages the market; but the "straddling" by experts should keep the price of the various "spot" cottons and "futures" in relations which are in the nearest attainable conformity with present and estimated supplies and present and anticipated conditions of demand.

Here it will be convenient to notice two important modifications in the machinery of marketing necessitated by the increasing quantity of transactions which accompanied the expansion of the cotton trade and the extended use of "futures." The one was the establishment of the Cotton Clearing House, which led up to the Cotton Bank, with which it ultimately amalgamated; the other was the system of periodic settlements. The final settlement[1] of a contract in "futures," involving perhaps scores of parties who had passed the contract on and had differences to receive or pay, was a lengthy, tedious, and unsatisfactory process, and it became obvious that some organisation through which it could be conducted would have to be introduced. The principle of the clearing house, employed by the banks in their relations with each other, naturally suggested itself as the solution of the difficulty, and it was tried with marked success on the Liverpool Cotton Exchange. The establishment of the Cotton Bank as naturally followed. Its purpose was to obviate the necessity of cash being used for settlements, which had resulted, says Mr. Ellison, in an amount ranging from £100,000 to £150,000 being carried about the market from day to day.[2] Obligations are now met by "credit vouchers," and balances only need be paid or received. The balances are discharged through the

1. For an account in detail of this process see Hammond, pp. 307-8.
2. p. 289.

Cotton Bank. Each dealer passes his debit and credit vouchers through the Cotton Bank and pays in the balance owing by him or draws upon the balance to which he is entitled.

In adopting periodic settlements the cotton brokers were but following the example set by the Stock Exchange. Their main object was to prevent heavy speculation in futures by fraudulent or criminally sanguine operators without capital. Under a system of periodic settlements all that is at stake between the parties to a bargain is the difference which the prices of futures may show in the settlement period: whereas, under the system of settlement only on delivery, the whole difference in price which could arise between the creation of the future and its "ringing out" was at stake. In short, periodic settlements are periodic tests of the solvency of operators; and they therefore afford a guarantee that bankruptcy shall be discovered before deficits have become dangerously large. Much stubborn opposition was offered to the scheme by many who were of opinion that it would open the door still further to speculation. This it did, in so far as it enabled people to "deal" with less capital than had been requisite formerly. But at the same time it enabled more experts to enter the market. In spite of opposition, a section of the brokers formed themselves into a Settlement Association in 1882, and in 1884 the scheme was adopted by the Liverpool Cotton Association, with the saving clause that "settlement terms," which at first provided for fortnightly settlements and then for weekly ones, should not be compulsory. Weekly settlements are now customary between brokers, but between brokers and merchants they are a matter of arrangement. In many cases a broker will require his customers to keep up a running margin.

The history of the development of the markets in yarns and fabrics yet remains to be written: here I can only pretend to offer the roughest sketch.

Much that has been said above of the cotton market is true of the yarn market. But the latter is much less developed, for yarns, which vary with the nature of the cotton worked up, and, in addition, with differences in the mixing, cleaning, carding, drawing, and spinning of the cotton, are less easily graded. Though there is a rough approximation to grading which dates from the last century,[1] many important differences may be found in yarns of one grade: hence a manufacturer buys not simply 32's, but a particular firm's 32's. The numberless varieties of yarns known by the same name explain how it is that no futures are recognised in the yarn market. Many yarn markets existed in the past—Blackburn, for instance, was the commercial centre for North and North-East Lancashire—but now almost all dealing takes place at one centre. The same causes which drove the Manchester Cotton Market back to Liverpool forced the local yarn markets into Manchester.

The commercial operations lying between spinning and weaving are undertaken by yarn agents, but no distinction exists between buying and selling yarn agents. The yarn agent, as a rule, finds buyers for the spinners and receives a commission only from the spinner, who is generally informed of the name of the buyer and takes all risks. Many transactions are, however, "*del credere*," the agent bearing all the risks, and really becoming a principal. One noticeable feature in Manchester commercial life is the increase in the number of yarn and cloth agents who are merely

1. See Robert Owen's *Autobiography*, p. 32. About 1790 "yarns were sold according to a published list of prices for each number . . . when inferior so much per cent in price was deduceed from the published lists; or when very good in quality so much per cent was added to the price."

"runners," or "go-betweens." The chief reason for this increase seems to be that an agent's connection is not very closely associated with his office, and that many kinds of agency work can be carried on without capital. Hence an agent's clerk, when he gets to know the business and becomes acquainted with a few cotton spinners and manufacturers, may become an independent agent. The head of an agency firm leaves, at his death or retirement, as many potential agency businesses as there were individuals associated with him in the chief work of his firm. But the head of a spinning firm leaves behind him at death or retirement only one spinning firm. Finally, as regards the yarn market, we have to observe that no associated circular has yet appeared, though some firms issue a weekly circular of their own. So far as the writer is aware, no attempt has been made to collect and publish a record of daily or weekly sales, and the market therefore suffers from the want of accurate information. Such an attempt, however, was made in 1899 in a less developed market, namely, the cloth market. Figures were collected for one month, but the attempt was then given up. It is impossible to induce all dealers, without exception, to render careful and accurate returns, unless they are members of some association which enforces such action as a condition of sharing in the facilities for marketing which the association offers. Moreover, when the varieties of goods sold are many, a simple and satisfactory classification is not easily found.

The cloth market is far removed in character from the highly developed markets, since fabrics contain all the differences that exist between yarns, and in addition all those consequent upon the numerous operations conducted in the weaving shed. Yet we find a rough grading of certain classes of cloth, which the development of

machinery is constantly rendering more perfect. Cloths purporting to be the same vary less now that the differences due to human skill have been minimised and a greater uniformity has been introduced into the working of power looms. In the period 1812—17 pieces of hand-made cloth of equal length, purporting to be the same, would vary in weight from 5lbs. 1oz. to 6lbs. 4oz., but by 1860 the maximum variation in pieces of about 5lbs. 2oz. did not exceed 5oz.[1]

The cloth market is somewhat the same as it was at the end of the eighteenth century. The grey cloth agent, whose function is analogous to that of the yarn agent, is a new feature, and the Manchester warehouseman or shipper takes far fewer risks and stocks less, in proportion to the business done, than did his predecessor a century ago. Guest tells us that at the end of the eighteenth century "the Master attended the weekly market at Manchester, and sold his pieces in the grey to the Merchant, who afterwards dyed and finished them.[2] Instead of travelling with their goods on pack-horses (as they had done just previously), the Merchants, or their Travellers, now rode from town to town, carrying with them patterns or samples, and on their return home the goods sold during the journey were forwarded by the carriers' waggons."[3] A class of merchants, both in the home and foreign trade, whose dealings with the producers were on the basis of "consignment," appear to have carried on extensive businesses early in the nineteenth century. It was a time when the output from Lancashire was expanding in consequence of new inventions and new enterprise, and when neither

1. Alderman Nield's paper in the *Statistical Journal* for December, 1861.
2. The dealers would sometimes sell their goods outright to the calico printers. Deliveries of prints would be made at the Manchester warehouse from the print works on Tuesdays, Thursdays, and Saturdays in the busy seasons of Spring and Autumn, and the pieces would be sold to the drapers who flocked to the warehouses on the sale days. (See Bamford's *Life of a Radical*, Dunckley's Ed. p. 227 et seq. Vol. I.)
3. *History of the Cotton Manufacture*, p. 11.

foreign markets nor home markets were yet prepared to take large stocks. The number of small manufacturers, without capital or a merchant patron, was on the increase; and the system of marketing by consigning their goods, which meant the accumulation of risks upon the producer instead of on the dealer, naturally spread when competition among producers was keen, until it was brought to an end by its ravages among those manufacturers who resorted to it. The "consignment system" consisted in sending goods to dealers (especially those at Liverpool and London, and of these notably the export houses) to be sold at the best prices obtainable. The dealers made advances to the manufacturers up to about one-half or two-thirds of the value of the goods consigned, and frequently nothing more was paid. Sometimes even a return of a portion of the advance was demanded, when actually, or according to the tale of the dealers, the goods realised very small prices. Hence these houses were soon called "slaughter-houses"; and it was asserted by some of the manufacturers that the dealers "triangled" them, by which they meant that the sales had been fictitious sales, conducted by three or more merchants operating together and selling to each other at low prices agreed on between them.[1] A little "consignment" business is still done; a new branch of foreign trade may begin in its way, but generally without advances being made on the value of the goods consigned, unless they are given by commercial banks. With reference to foreign trade, it is interesting to observe that English merchants tried to develop it about 1770 by travelling abroad or keeping agents or partners abroad,[2] but that, shortly afterwards, foreigners responded by coming to this country and

1. See, for example, Reports, &c., 1808, ii. p. 103; 1810—11, ii. p. 405; 1834, x Q. 5405—18, 4436—46 and 4503—15; 1833, vi. Q. 624—5, 627—30, 632, 729—32, and 738.
2. Aikin, p. 184.

establishing themselves in Manchester. That they were viewed with suspicion for some years we may gather from the writings of William Radcliffe and others, who attributed, in no small degree, to the business with them, and to their supposed methods, any depressions and disasters which fell upon Lancashire.

The less developed markets, the yarn and cloth markets, each of which formerly had several local habitations, have now one centre, the Manchester Exchange. The Manchester Exchange was first built in 1729, but after some years "the inconvenience thereof, and the filth with which it was continually disgraced, kept the merchants outside of its walls, in despite of the narrow crowded streets, and the humid temperature of this town."[1] The district then became the resort of sharpers and idle vagabonds and a nest of disease, so that, "in 1792 [says Mr. Aston] the Lazaretto (for such it has not unaptly been called) was taken down at the expense of the town, and its scite made use of for commercial purposes; manufacturers and merchants still denominating it the Exchange, and resorting there at certain times of the day till the present erection: an Exchange worthy of this great commercial place, was carried into effect."[2] The first stone of this new building was laid in 1806, and it was opened in 1809. The present building was erected in 1869. There is nothing to indicate that the Manchester Exchange was originally a piece-hall in which the goods to be sold were actually exhibited; certainly it was not so after 1792, when the old building was pulled down, and the site became merely a place of meeting for merchants. The new building, opened in 1809, was from the first used simply as a meeting-place.

1. *History of the Cotton Trade*, 1823, p. 223.
2. *History of the Cotton Trade*, 1823, p. 223. The Aston referred to was Editor of *The Manchester Herald*. The new Exchange was not placed on the site of the old one, but contiguous to it.

Since the trade of Lancashire is to so large an extent a trade with foreign parts, it will be desirable to give some further account here of the manner in which such trade is conducted. It is a curious circumstance that in some industries the foreign business is in the hands of specialist sellers, whereas in other industries it is managed by manufacturing houses. Our hardware industry is not characterised by that sharp division between merchants and manufactures which cannot fail to strike the most cursory observer in Lancashire. It would be incorrect to say that the whole of the export business in cotton yarns and goods was in the hands of "shippers;" there are some houses which manage their own marketing abroad, but these are exceptions. Moreover, in Manchester there is a well-defined distinction between the home merchant and the merchant dealing with foreign orders. The latter is known as the shipper.

It would undoubtedly be a mistake to argue that the specialisation of marketing as a distinct business indicates a high stage of development in the direction of which all industries are tending. Rather we should conclude that it is a feature peculiar only to certain industries, and that it is not impossible to find instances of development destroying the business of the merchant and handing over his functions to the manufacturer. Selling through independent merchant houses is to be expected when the commodities dealt in tend to be of sorts that sell themselves, that is, commodities more or less gradable for which a private market need not be won. I imagine that it would be correct to say that the Lancashire manufacturers who push their own products over the heads of the merchants are those who produce special classes of goods and depend upon these goods earning and retaining a popularity of their own. When the goods to be sold have

to make private markets, or when they are complicated and require to be explained to would-be buyers by competent experts, there is a tendency for manufacturers to attempt themselves to reach the consumers, or retailers, or the foreign agencies through which such goods can be sold. Hence we find that the American seller of machinery to-day is frequently a person who has worked in a machine-shop and is sent out as a traveller by the makers of the machinery that he offers.

We may say, then, that the degree in which the principle of division of labour has marked off selling for distinct businesses is a function of the character of the goods concerned. And we might argue with equal force that it is a function also of the magnitude of the typical business which economic forces have brought about in each industry. The larger the typical producing business the more possible is it for manufacturers to arrange themselves for the selling of their goods. On this ground the position of the merchant in the early days of the Lancashire industry was unassailable; the hand-loom weavers and the small factory masters could not hope to do much in the way of pushing their goods among possible buyers. But to-day, on this ground, the dealer's position is less secure, and in some cases huge manufacturing businesses, and the aggregation of businesses, have driven him from the field. In the United States certainly it would appear that the movement in the direction of industrial combinations has brought about a "throw-back" of the dealing function to the producing firm. The enormous increase of manufacturers' catalogues of late years, and the improvement in the information contained in them, especially in the United States, marks no doubt the greater efforts that are being made by the producers to-day to reach the buyers, because of the magnified scale

of their businesses, or because of the growing complexity of their products, or the character of the latter as specialities. Not unusually, therefore, it would seem that the specialisation of the product is accompanied by a specialisation of dealing in the product which destroys dealing as a distinct business. This line of argument, with particular reference to the differentiation of industries, will be pursued again in the next chapter, but the warning might be uttered now, for which additional grounds have yet to be defined, that there is a danger of falling into too mechanical and external a view of the relation between specialism and economic progress. However, it must be added that every change in business tendencies cannot be correctly explained by an alteration in the comparative economies of different methods apart from the character of the human factor. A new business phenomenon might be occasioned wholly by a revival in enterprise and self-reliance and a tendency to make experiments.

Much has been written lately of methods of pushing sales abroad, and criticisms have been passed to the disparagement of the English. In considering the question of selling abroad a fundamental distinction must be drawn between operations upon developed markets and those upon undeveloped markets. In the developed market, in all probability, businesses will exist for the distribution of most kinds of goods and for bringing them before the notice of the consumers. In such case the problem of selling abroad is the problem of linking the producers on to such agencies; and as a rule the state of credit in the developed foreign market will render any "consignment" business, or long-extended credit, unnecessary. The peculiar feature of the export trade from Lancashire is that these foreign agencies have frequently been drawn

from their original base to Manchester. Conspicuous advantages are to be derived from the distributive business getting into close and continuous touch with the industry, and to do so is not impossible when the industry is highly localised. A Greek firm trading in machinery, were it determined to shift to the neighbourhood of the manufacturers, would be compelled to move to England, the United States, Germany, Belgium and other countries, since machinery is exported from many countries. The dispersion thus involved would prevent the shifting from taking place. But years ago in the case of the cotton trade the attraction of selling agencies to the industrial base had had no such disruptive influence, for the sole exporting country was England. Hence the influx of foreign traders. It has been said that England sends fewer travellers about the world than some other countries. Assuming this statement to be correct, then so far as the trade in cotton goods is concerned, the explanation is to be found partially in the presence of foreign houses in Manchester. Many travellers do not proceed from Lancashire to Greece and Spain and Germany because Greece and Spain and Germany have come, in a sense, into Manchester.

From the foregoing it is apparent that there are two lines of division between shippers. Shippers may be classified according to the markets with which they deal or according to the commodities in which they deal. At one extreme lie shippers who export almost anything to a particular place, while at another extreme may be found those who export a particular sort of thing anywhere. Many shippers export only a particular thing to a particular place. No great difficulties appear to lie in the way of explanation, and we shall not, therefore, enter upon a lengthy argument that might prove both tedious and gratuitous. It might be suggested here, however, as a

point for verification, that, in respect of business with developed countries, one would expect to find the foreign house grafted on to us confining its operations largely as a rule to the country whence its principals came, and the English house distributing goods more widely. For the English house would usually be working through houses abroad and through agencies, whereas the foreign house would naturally have nearer connections with the consumers in the land of its origin than any English house could hope to establish. No clearly defined line of demarcation could be drawn between the two kinds of firms, I imagine nevertheless, and as generations pass they no doubt merge a good deal into one another in respect of characteristic features.

The problem of selling in a backward country is totally different from that of marketing where economic development is advanced. In the backward country capital is lacking, credit facilities are undeveloped, people are slow to admit new ideas and no distributing agencies, or very few, of the kind required, may exist. The representative of the British firm must, therefore, know the country thoroughly and the language and customs of the people. He must reach the consumers more directly and nearly than the representative of a British firm trading with, say, Germany. In the backward country, therefore, the traveller avails little. The resident representative is essential. His continued presence is requisite both for the exciting of demand and also for eliciting the conditions of sound credit. Credit is almost a necessity in the undeveloped country, but credit given indiscriminately in such a country would inevitably eventuate in heavy losses. The resident representative will gradually discover whom he can trust and for how long, when to contract credit, and upon what conditions of sale goods can be most satisfactorily disposed of.

APPENDIX I.

Statistics as to Imports of Cotton and Exports of Cotton Goods in General.

At the end of the eighteenth century the kinds of cotton used were those mentioned below, approximately in the quantities there given:—

British West Indian	6,600,000 lbs.
French and Spanish Settlements ...	6,000,000 „
Dutch Settlements	1,700,000 „
Portuguese Settlements	2,500,000 „
East Indian	100,000 „
Smyrna or Turkey	5,700,000 „

(See *Important Crisis in the Calico and Muslin Manufactory*, 1788. Manchester Library).

Sea Island cotton, the very best, was first spun by Robert Owen as manager for Drinkwater in 1791. Machinery was not good enough to spin North American cotton until some years later. Cotton was introduced into Egypt prior to 1820, but it attracted no attention until after that date. The average annual imports from various countries during the last five years of the nineteenth century were as follows:—

	Million lbs.
United States	1436·0
Brazil	13·8
Peru	8·5
Egypt...	296·0
British Possessions in the East Indies... ...	41·0
Total Imported...	1779·0
Excess of Exports	1576·0

From no other country did we obtain as much as a million lbs. on an average.

In the following table five-yearly averages of our importa-

tions of cotton are given for different periods, and side by side with them five-yearly averages of our exportations of cotton yarns and manufactures. The value of money (according to Sauerbeck's index numbers) was about the same in the periods 1831-5, 1851-5 and 1876-80. In the last two periods in the table below, however, prices had fallen greatly; the figures in the brackets give the values assuming that prices had not fallen.

	Imports of Raw Cotton. Million lbs.	Exports of Cotton Yarns and Manufactures. Million £
1700–5	1·17	—
1771–5	4·76	—
1785–9	—	1·07*
1791–5	26	2·09*
1816–20	139	20·4†
1831–5	313	19·1
1851–5	872	31·8
1876–80	1,456	68·4
1891–5	1,746	66·2 (90)
1896–1900	1,798	66·4 (90·3)

* Official values. All the other values are declared.
† Inflated values.

APPENDIX II.

The following quotations of cotton at Liverpool for Wednesday, May 18th, 1904, may be taken as typical of the method of quoting, but the prices were unusually high at the time.

American deliveries, any port, basis of middling, good ordinary clause[1] (the fractions are given in 100ths of a penny):

1. The seller may tender "good ordinary" cotton or any higher quality of Upland cotton. See p. 127.

	Yesterday's close.	To-day's early sales.
May	7·31	7·23, 5*, 6*, 4*
May-June	7·27	7·19, 7, 8, 7, 8*, 9, 20, 1, 19, 20, 19, 20*, 19
June-July	7·22	7·11, 2, 1, 3, 4*, 6, 4*, 5*
July-Aug.	7·18	7·10, 09, 8, 9, 10*, 09, 8*, 9, 10, 11*, 2*, 1, 2, 3*, 2, 1, 10, 1*, 10, 09
Aug.-Sep.	6·94	6·83, 5, 6, 7, 6*, 5, 6, 8*, 7, 6*
Sep.-Oct.	6·37	6·33, 4, 5, 3*, 4*
Oct.-Nov.	6·11	6·06*, 7, 9, 8*
Nov.-Dec.	6·04	5·99, 6·0, 1*, 0
Dec.-Jan.	6·01	5·93, 4, 6, 7*, 8*
Jan.-Feb.	6·00	5·93, 5, 6*, 7, 8, 7, 6*

	Late business	Closing values.
May	7·23, 7*	7·25
May-June	7·19, 8*, 22*	7·20
June-July	7·14*, 3, 5, 6, 7, 8, 5*, 8, 7, 5	7·15
July-Aug.	7·09, 10, 09, 8*, 9, 10, 11, 2, 3, 2*, 3, 2, 3, 4*, 5, 4, 3, 2, 1, 2, 1, 2, 3, 4, 3, 2*, 3*, 2, 1, 2, 1	7·11
Aug.-Sep.	6·86, 5, 6, 5, 7*, 9, 90, 88*	6·88
Sep.-Oct.	6·33, 7*, 4	6·34
Oct.-Nov.	6·08, 7*, 8*, 10, 09, 10, 08, 7	6·08
Nov.-Dec.	6·0, 1, 2*	6·00
Dec.-Jan.	5·98*	5·97
Jan.-Feb.	5·97*, 6, 9, 8	5·96

Egyptian deliveries, fully good fair (in 64ths of a penny):—

	Yesterday's close.	To-day's Business before noon.	To-day's Business after noon.	To-day's Closing values.
May....	7-61			7-57
June ...	8-0		7-58*	7-60
July....	8-4	8-0, 7-63, 2	7-60*, 8-0	8-0
Aug.....	8-8			8-4
Sept....	8-5	8-0*	8-0*, 7-63*, 8-0	8-0
Oct.....	8-1			7-60
Nov....	7-33	7-29	7-30*	7-30

* Transactions of 100 bales only.

	Sales. To-day.	Sales. Prev. this week.	Speculation and export. To-day.	Speculation and export. Prev. this week.	Imports, including Hull, &c. To-day.	Imports, including Hull, &c. Week's Total.
American	4910	13870	200	550	1743	25927
Pernam, &c.	30	50	—	—	—	—
Rio Grande	20	60	—	—	—	—
Ceara & Aracata	—	—	—	—	—	—
Egyptian	500	1400	—	—	—	2604
Peru, &c.	150	340	—	50	—	591
Surat					—	1507
Madras	200	230	—	—	—	—
Bengal					—	—
China	80	—	—	—	—	—
Smyrna	110	50	—	—	—	1346
Total	6000	16000	200	600	1743	31975
		6000		200		
Since Friday		22000		800		

Quotations.

	G.O.	L.M.	Mid.	G.M.	F.G.M.	M.F.
American.	7·14n	7·28n	7·42n	7·50	7·56	7·64

	Mid. fair.		Fair.		Gd. fair.
Pernam	7·20	.....	7·52	.....	7·84
Ceara	7·16	.....	7·46	.....	7·72
Paraiba	7·16	.....	7·46	.....	7·72
Maceio	7·16	.....	7·46	.....	7·72

	Fair.	Gd. fair.	F.G.F.	Good.	Fine
Egyptian b'rn	$7\frac{1}{4}$	$7\frac{7}{8}$	$8\frac{1}{16}$	$8\frac{7}{16}$	9
Do. Upper	—	—	$7\frac{15}{16}$	$8\frac{3}{16}$	—

	Gd. fr.	F.G.F.	Gd.	F.G.	Fine.	S'fine
M.G. Broach	—	—	$6\frac{1}{8}$	$6\frac{5}{16}$	$6\frac{5}{8}$	—
Bhownuggar	$5\frac{1}{4}$n	$5\frac{3}{8}$n	$5\frac{1}{2}$n	$5\frac{5}{8}$n	$5\frac{13}{16}$n	—
No. 1 Oomra	$5\frac{5}{16}$n	$5\frac{7}{16}$n	$5\frac{9}{16}$n	$5\frac{11}{16}$n	$5\frac{7}{8}$n	—
Bengal	$4\frac{7}{16}$n	$4\frac{9}{16}$n	$4\frac{11}{16}$n	$4\frac{13}{16}$n	5n	$5\frac{1}{8}$n
Tinnivelly	6	$6\frac{3}{16}$	$6\frac{5}{16}$	—	—	—

"n" means "nominal," that is the price at which a deal would probably have been effected had business been done.

Purchases for "Speculation" remain in the market and therefore figure again in the sales.

The following table of quotations for a few leading descriptions of yarn and cloth on Friday, May 14th, 1904, at Manchester, may be taken as typical of the method of quoting, but the prices at the time were unusually high:—

Yarns.

	Per lb
32's mule twist cops	10d. to 10 7/8d.
40's mule twist cops	11d. to 11 3/4d.
50's mule twist cops (American)	12 1/8d. to 12 3/8d.
50's mule twist cops (Egyptian)	12 1/2d. to 13 1/2d.
60's mule twist cops (Egyptian)	13 1/4d. to 14 1/4d.
40's weft	10 1/4d. to 10 3/4d.
50's weft	11 1/4d. to 11 3/4d.
60's weft	12 3/4d. to 13 1/4d.
20's water twist bundles	9 3/8d. to 10 3/8d.
30's water twist bundles	10d. to 11d.
40's mule bundles	11d. to 12d.

Cloth.

In.	Yds.	Reed.		Pick.	Nos. of Yarn or Weight.		*Per Piece. s.	d.		s.	d.
35	38	16	×	14	8 1/4lb.	Shirtings	6	2	to	7	11
35	38	17	×	16	9 1/4lb.	Shirtings	6	11	to	7	7
38	38 1/2	15	×	12	8 1/4lb.	Shirtings	5	9	to	6	5
39	38 1/2	16	×	15	8 1/4lb.	Shirtings	6	5	to	7	9
38	38 1/2	18	×	16	10lb.	Shirtings	7	10	to	8	11
38	38 1/2	17 1/2	×	17	10lb.	Shirtings	8	6	to	9	6
45	38 1/2	15	×	12	9lb.	Shirtings	6	7	to	7	3
45	38 1/2	16	×	15	9lb.	Shirtings	7	8	to	8	8
30	40		—		14lb.	Drills	9	0	to	9	9
41	22	16	×	14	40's-50's	Jacconets	3	6	to	3	9
46	22	16	×	14	40's-50's	Jacconets	3	10 1/2	to	4	1 1/2
42	20	17	×	16	40's-50's	Jacconets	3	6	to	3	9
42	20	20	×	18	40's-50's	Jacconets	4	4 1/2	to	4	7 1/2
32	24	14	×	14	6lb.	T cloth	4	7 1/2	to	5	0
32	24	18	×	18	7lb.	Mexican	5	9	to	6	3
32	116	16	×	16	32's-50's	Printers	15	7 1/2	to	16	7 1/2
36	50	19	×	22	11 3/4lb.	Printers	12	3	to	12	9
36	40		—		12lb.	Sheetings	10	1 1/2	to	10	10 1/2

* Nominal.

CHAPTER VIII.

Localisation, Industrial Specialism and Modern Problems of Organisation.

We shall review first in this chapter the operation of those influences which tend to induce the localisation of industries or their dispersion. There are some industries whose geographical centralisation becomes increasingly defined; there are others whose development appears to lie along the lines of decentralisation. The iron and steel industry is localised in a few places: engineering is less localised; the three leading textile industries are all concentrated almost entirely in one district each. Woollens have been pushed from Lancashire over to the main seat of the industry in the West Riding, and the manufacture of linen has been gradually forced from England and Scotland to Belfast and its neighbourhood. Years ago the cotton industry was more widespread in the British Isles than it is to-day; the process of concentration has been taking place: abroad, too, the same movement may be traced, but it has not yet proceeded so far. The geographical centralisation of the British industry is now remarkably complete. In 1899 Lancashire was the home of nearly 76 per cent. of the cotton operatives in the United Kingdom and of more than 80 per cent. of those in England and Wales, while Lancashire, Cheshire, Derbyshire, and the West Riding, contained together 91 per cent. of the cotton-working population of the British Isles, and no less than 96 per cent. of that of England. How intense the process of centralisation has been since the

establishment of the factory system may be gathered from the table that follows.[1]

Distribution of Cotton Operatives in 1838 and 1898—9 (from returns of Factory Inspectors)

	1838†	*1898-9**
Cheshire	36,400	34,300
Cumberland	2,000	700
Derbyshire	10,500	10,500
Lancashire	152,200	398,100
Nottinghamshire...	1,500	1,600
Staffordshire	2,000	2,300
Yorkshire	12,400	35,200
England and Wales	219,100	496,200
Scotland	35,600	29,000
Ireland	4,600	800
United Kingdom...	259,300	526,000

*The only other county with more than 1000 was Gloucester with 1500.

† 217,000 of the 219,200 cotton operatives in England and Wales were employed in the counties enumerated. Of the 2,200 operatives whose location is not given about 1,000 worked in Flintshire.

Had the distribution of the industry remained constant Lancashire would have contained little more than 300,000 cotton operatives in 1899, but it actually contained nearly 400,000; the number of cotton operatives in Scotland which would have passed 70,000 was less than 30,000 and had absolutely declined; and in Ireland the numbers did not reach as many hundreds as they should have reached thousands. The percentage of cotton operatives in

1. In this connection it is interesting to notice that in 1788 there were 143 water-mills in the cotton industry of the United Kingdom which were distributed as follows among the counties which had more than one :—

Lancashire	41	Flintshire	3
Derbyshire	22	Berkshire	2
Nottingham	17	Lanark	4
Yorkshire	11	Renfrew	4
Cheshire	8	Perth	3
Stafford	7	Midlothian	2
Westmoreland	5	The Isle of Man	1

(*Important crisis in the calico and muslin manufacture*, 1788.)

Lancashire, which had been 58·5 in 1838, was as much as 75·7 sixty years after.

It is not so easy to draw a comparison between the sizes of the industry in smaller localities now and more than fifty years ago, since the distribution of cotton operatives used to be stated by areas which have not been taken recently for the same purpose. From the following table, however, which has been constructed chiefly to show the present distribution of the industry, a rough idea of some of the movements that have taken place may be gathered. Only the most important places are included in this list. The names to the left stand for County Boroughs, Municipal Boroughs and other Urban Districts with reference to column 1, for Inspectors' Districts with reference to column 2, and for Parishes with reference to column 3. The areas thus accorded the same name are far from being identical.

Distribution of Cotton Operatives in Lancashire and the vicinity at the present time and in 1838.

	County Boroughs, Municipal Boroughs, and other Urban Districts (Census, 1901). *a*	Factory Inspectors' Districts in Lancashire (Factory Inspectors' Returns for 1898-9).	Parishes (Returns of Factory Inspectors' for 1838).
Blackburn	41,400	117,800	10,500
Bolton	29,800	75,900	9,900
Oldham	29,500	66,400	15,000
Burnley	27,900	—	—
Manchester & Salford	27,200	32,600 *b*	39,400
Preston	25,000	34,300	7,100
Rochdale	14,800	76,000	10,900
Darwen	12,500	—	—
Nelson	12,400	—	—
Bury	10,700	—	13,700
Stockport *c*	9,700	—	23,800
Ashton-under-Lyne	8,600	—	12,100
Accrington	8,300	—	—
Colne	7,300	—	—
Heywood	7,300	—	—
Stalybridge *c*	7,100	—	—
Todmorden *d*	6,900	—	—
Rawtenstall	6,600	—	—
Hyde *c*	6,500	—	—
Chadderton	6,400	—	—
Haslingden	6,100	—	—
Bacup	5,900	—	—
Chorley	5,900	—	1,800
Farnworth	5,700	—	—
Leigh	5,000	—	2,400
Great Harwood	4,900	—	—
Middleton	4,900	—	2,500
Radcliffe	4,800	—	150
Crompton	4,600	—	—
Royton	4,600	—	—
Padiham	4,300	—	—
Wigan	4,300	—	6,100
Mossley	4,200	—	—
Ramsbottom	4,200	—	—
Oswaldtwistle	4,100	—	—
Dukinfield *c*	4,000	—	—
Walton-le-Dale	3,900	—	450
Clitheroe	3,300	—	—

a The cotton operatives in the various places in Derbyshire are not separatel specified.

b Manchester District.

c In Cheshire.

d In Yorkshire.

On one side the development of the nineteenth century has consisted in a diminution of social friction and an intensification of business sensitiveness, which have enabled change to take place more easily; on another side it has meant, in numerous instances, an augmentation of the economies that result from the centralisation of industry, and a contraction (through improved means of transport and communication) of the disadvantages associated with producing far from the consumers. The process of centralisation, once begun, continued with increasing rapidity, for the greater the centralisation the greater became the economies of centralisation. These economies, it is a commonplace to remark, consist in specialism, both that within the cotton industry and that throughout the subsidiary industries. But it must not be supposed that all the advantages are invariably in favour of the large towns or of the towns where the industry is largest.[1]

The natural advantages offered by different places to particular industries constitute an important determinant of localisation. Thus, in the case of the iron and steel industries, ores and coal must be accessible, and in this country, since much ore must be brought from abroad as a rule, the proximity of a port is a convenience. It is an advantage for all exporting industries to lie in the neighbourhood of a port, but the advantage may be counteracted by the more attractive features of other places. Lancashire presented to the cotton industry a

1. After a town has passed a certain magnitude, which may be regarded as varying with the character of the industries included in it, certain trades may find that the maximum net economies in production are offered by smaller places. With a view to discovering whether any general statement could be made connecting the size of the trade in a particular place with the rate of its increase, I have calculated, with the assistance of Mr. Douglas Knoop, the increases in the numbers of cotton operatives in the ten chief centres of the cotton industry for the last two decades and compared them with the normal increases (assuming the distribution of the industry in Lancashire had remained constant), both of the same towns and of the remainder of the industry; but the results of the calculation are wholly inconclusive. It might be that the disturbing causes were too many and too weighty for the tendency under examination to be traced statistically in the short period of twenty years. A longer period could not be taken owing to the deficiency of information yielded by the census returns prior to 1881

group of natural advantages which, for the purposes of that industry, are unrivalled elsewhere. All the raw material for the manufacture must be imported; Liverpool offers almost unlimited harbourage. And the port being at hand the expansion of the industry by the development of an export trade was encouraged. Other things being equal, an industry will tend to export the more, the more it imports and the more its position has been determined by its needs as an importer. In addition to the port, Lancashire provided cheap coal, and, in addition to coal, an atmosphere just suited to the production of cotton goods. For spinning a damp climate is required, as otherwise the threads snap under the strain put upon them in the process of drawing and twisting. Dampness causes the fibres to cling together; and it has been found impossible to produce artificially and economically the peculiarities of the damp atmosphere. The spinning districts of Lancashire are so suitable because they lie on the slopes of hills facing west, upon which the damp breezes from the Atlantic discharge their moisture as they are driven to higher levels by the slope of the ground. With its humid atmosphere, its coal and its harbour, its climate rendering an indoor occupation desirable, and its general unsuitability for agriculture, Lancashire is marked out as a spot exceptionally well endowed for the prosecution of the cotton industry.[1] But the localisation of an industry, it must not be forgotten, is frequently to be explained by causes which have no

1. Currents of air coming to this country from the west contain a large percentage of moisture, and vary in temperature according to their elevation. On encountering a hill the hot and cold layers intermingle to a more or less extent, and the resulting mixture is nearer to the saturation point than either the hot layer or the cold layer. This phenomenon is due to the fact that a mixture of dry hot air and dry cold air forms an air of an intermediate temperature, but more moist than either the hot air or the cold air, the degree of moisture being measured by the ratio of the actual amount of moisture to the moisture at the saturation point for that particular temperature. Then, again, the rarefaction, and the consequent lowering of temperature of the air, which are due to its sudden elevation, tend to produce condensation. Artificial humidifiers have been tried under unfavourable climatic conditions, both in England and abroad, but no cheap and satisfactory one has yet been discovered.

reference to the present economies in production. Indeed, the cotton industry itself settled in Lancashire for no particular reason, except perhaps that the woollen industry was already there, that foreigners were kindly received, and that Manchester was not a Corporation. Had Manchester been a Corporation it is likely that aliens would have been discouraged by the economic favours accorded to freemen. But as soon as the value of the physical features in certain parts of Lancashire began to be realised the manufacture in other districts tended to be drawn with increasing force to the main seat of the industry; for localisation, too, brought with it great economies in production.

First among the economies associated with localisation those of the specialisation of businesses may be mentioned. Specialism is limited by the extent of the industry in the district. Thus a mill may confine itself to the production of a narrow range of counts if the market for yarns in the district is sufficiently large to provide a steady demand for the few yarns of the character produced by it. It is true that the market for yarns of this kind might be as large if the industry were not localised, but under such circumstances it might not pay in many cases to carry the yarns to a number of different places in the country, and the mill would be less known, and numerous obstacles would tend to keep the seller and possible buyer apart. To attend the Manchester Exchange once or twice a week is easy for a manufacturer at Blackburn but difficult for a manufacturer at Hull or Bristol. Hence marketing difficulties would check specialisation were the industry not concentrated in a particular locality. In the Manchester Exchange we possess an institution by which the cotton industry, with all its differentiation, is held together as a whole. Upon the Exchange its parts are

kept in close and continuous contact. It is by the development of internal marketing facilities, to preserve the connections which differentiation severs, that scope for business specialism within an industry is to be provided.

Another important advantage emanated from the localisation of the industry, namely, the proximity of subsidiary industries and their specialisation. These sprang up around the main industry which constituted their market; and, the market being at the doors of the subsidiary industries, appropriate responses to the needs of the cotton industry were assured. Engineering is one example of the subsidiary industries. The bulk of cotton machinery used in Lancashire is now made in Lancashire; and undoubtedly from the machine-works being in the immediate neighbourhood of mill and weaving-shed there has resulted a remarkably close adaptation of means to ends in respect of machinery. No better proof of this could be forthcoming than the exportation of textile machinery from Lancashire in such large quantities to places in Europe and Asia where the cotton industry is carried on.[1] Herein, in the presence of our local machine industry, we have an example of the forces of dispersion having proved triumphant, if the mechanical engineering industry as a whole is to be taken as one industry. It is to be found, not in one or two spots in isolation, but in every manufacturing centre in the vicinity of the industries which it serves. The cotton industry has differentiated, but its parts have clung together in Lancashire around the local market which preserves their unity; the engineering industry, too, has differentiated in

1. Our exports of textile machinery, which of course includes also the machinery used in the woollen and linen industries, have been as follows in the last few years :—

000's omitted.

1893.	5,256'	1897.	5,702'
1894.	5,479'	1898.	6,628'
1895.	6,152'	1899.	6,804'
1896.	6,746'	1900.	6,214'

these isles—to-day it would be impossible to find a machine works so many-sided as the famous Soho works of the days of Boulton and Watt—but its parts have scattered under the attractions of localised demand and other influences, the need of the union of parts being less dominating in engineering than in the cotton industry.

The separation of functions in the cotton industry, and their division among distinct businesses, is remarkable. Moreover, the localisation of many specialised branches of the industry has taken place, as well as the localisation of the industry as a whole. Thus Mr. Helm writes:—"The cotton industry of the United Kingdom is much more highly differentiated than that of any other country. Not only is the variety of the productions much greater, but also the several branches of the industry are specialised to a degree not known elsewhere. In the first place the two operations of spinning and weaving are, in the main, separated, being conducted to a large extent in different districts. Thus spinning is largely concentrated in South Lancashire, and in the adjoining borderland of North Cheshire. But even within this area there is further allocation. The finer and the very finest yarns are spun in the neighbourhood of Bolton, and in or near Manchester, much of this being used for the manufacture of sewing thread; whilst other descriptions, employed almost entirely for weaving, are produced in Oldham and other towns. The weaving branches of the industry are chiefly conducted in the northern half of Lancashire—most of it in such large boroughs as Blackburn, Burnley and Preston. Here, again, there is differentiation. Preston and Chorley produce the finer and lighter fabrics, Blackburn, Darwen and Accrington, shirtings, dhooties, and other goods extensively shipped to India; whilst Nelson and Colne make cloths woven from dyed yarn, and

Bolton is distinguished for fine quiltings and fancy cotton dress goods. These demarcations are not absolutely observed, but they are sufficiently clear to give to each town in the area covered by the cotton industry a distinctive place in its general organisation. In the processes following that of weaving to which the fabric is submitted, except when it is exported in the "grey" state, there is also much further separation of processes. These are, chiefly, calico printing, bleaching, dyeing, mercerising and finishing. But the most remarkable separation of functions in the cotton goods trade is the almost complete distinction between the businesses of manufacturing and distributing."[1]

Geographical conditions have no doubt determined in some degree the local habitation of certain specialised branches of the cotton industry—pure water, for example, is essential for bleaching and calico printing,—but on the whole accidental causes, combined with the economies which result from certain groupings of industries, have in all probability played a greater part. If we could take a bird's-eye view of English businesses over a long period, we should doubtless discover many mutual attractions and repulsions by which various trades were drawn together or driven asunder. For instance, one of the causes of the success of the spinning of coarse and medium yarns at Oldham, and of the weaving there, is Platt's machine works in which some thousands of hands are employed. Of course, the machine works were planted in Oldham largely because of the presence of the cotton industry, but if there were no machine works the nature of the demand for labour in Oldham would make it a less desirable town for the operatives, other things being equal. The mills and the machine-works, together with other industries,

1. *British Industries*, edited by Professor Ashley.

attract particular kinds of labour to Oldham; and these classes of labour afford about the right kind and proportion of men, women and children, to meet the industrial needs of the town. The industries attract labour in families, and the more or less surplus members of the families attract other industries. Strictly speaking "mutual determination" expresses the nature of the influences at work.

Unquestionably the general character of much of the labour of a particular place is frequently distinctive. As connected with this fact we may observe that the ratio of males to females employed, and of persons of different ages, varies considerably with the locality and the branch of the industry. The unit of labour is not always the male of any age between certain limits, nor is it the whole family. If it is "the family" at all, it is not the normal family of the census returns, but a variable part of it. A family, or a group, may be regarded as a labour unit when its parts tend to move as a whole, and when the interest of the whole determines its movements, in so far as they are determined by economic forces. Obviously, then, the unit of labour may be a group of a normal family which varies with its standard of life, cohesiveness and environment. Families of one class provide no child labour and little female labour; those of another class may supply women for limited kinds of work; while the families of a third class may offer the labour of all their members as soon as the law allows. Even among the cotton operatives divisions can be drawn according to the nature of the labour group offered by the normal family. A weaver's family provides generally a labour group of greater numerical strength, and with a greater proportion of children, than a spinners' family; and, as a rule, the group is greatest where the work is coarsest and heaviest and wages are least. That the

opinions, and educational and other influences, prevailing in a particular place, play their part in settling what the labour group shall be, is so obvious as scarcely to call for notice. An exhibition of the difference of views as to child-labour (upon which depends the supply of children in the labour market) was given in the vote taken in February, 1899, among the cotton spinners upon the proposal to raise the age limit to 12. The votes for and against were, to take extreme examples, 428 to 1270 at Clitheroe, and 125 to 2507 at Haslingden; that is to say they varied roughly from a ratio of 1 to 3 to a ratio of 1 to 20. It is the constitution and quality of the various labour groups, and the natures and requirements of different industries, together with those localising forces already referred to, which determine the forms which the groupings of industries throughout the country shall assume; and these latter, again, react on the former.

A table is given below to show the proportion of females to males employed in the cotton industry in various places. The extraordinary discrepancies between the several ratios is significant. I doubt whether these figures could be at all adequately explained without an investigation being made into the economic conditions of each place. The proportion of women employed is determined in general by the character of the work, the character of the labour in the place and the supplies of it, and the degree to which accommodation of industries to the labour, and labour to the industry, has taken place. In weaving as a whole the proportion of women to men is twice as great as in spinning as a whole,[1] and in certain classes of weaving the disposition to employ women is greater than in other classes. The guess might be hazarded that some places tending to have large surplus supplies of rough female labour, which will therefore be cheap, find themselves able to compete with more specialised centres of the cotton industry in certain classes of work.

1. See Table at the end of this Chapter.

Ratio of Females to Males of the Cotton Operatives employed in the following places in 1901. The number of Males is taken as 100.

Accrington	340
Ashton under Lyne	160
Bacup	155
Blackburn	130
Bolton	155
Bristol	600
Bradford	155
Burnley	140
Bury	245
Chorley	240
Colne	95
Darwen	165
Derby	650
Dukinfield	164
Halifax	165
Heywood	155
Huddersfield	150
Hyde	261
Leeds	665
Leicester	385
Liverpool	205
Manchester and Salford	295
Nelson	85
Nottingham	520
Oldham	140
Preston	225
Rawtenstall	160
Rochdale	165
Royton	61
Stalybridge	175
Stockport	185
Todmorden	106
Warrington	950
Wigan	535

"It is a curious circumstance," Guest has remarked, "that, when the cotton manufacture was in its infancy, all the operations from the dressing of the raw material to its being finally turned out in the state of cloth, were completed under the roof of the weaver's cottage. The course of the improved manufacture which followed was to spin the yarn in factories and to weave it in cottages. At the present time (1823) when the manufacture has attained a mature growth, all the operations, with vastly increased means and more complex contrivances, are again performed in a single building. The weaver's cottage, with its rude apparatus of peg-warping, hand-cards, hand-wheels, and imperfect looms, was the steam-loom factory in miniature." [1]

With the causes for the separation of spinning from weaving, referred to above, we have dealt in a previous chapter. Spinning was urged into factories by the requirements of new inventions while weaving was still being performed by hand and remained in the cottage. But, on the introduction of manufacturing by the power-loom, reasons were found for attaching it to businesses in which spinning was being carried on. Only those in the cotton trade could trust the new method, and the spinners could experiment with power-looms more cheaply than anybody else. They had under their control power, tried foremen, and organised arrangements for carriage within and to and from the mill. Further, just about that time, they could not invest much more capital in spinning, for foreign markets were well supplied and an enlarged demand for a commodity cannot be created at will. Moreover, when spinning and weaving were both conducted on the same premises, the costs of selling, buying, and delivering yarn were spared, so far as the yarn

1. p. 47.

produced in the mill was used in the weaving-shed. The early association of power-loom weaving and spinning is, therefore, comprehensible. But to-day in many places spinning has again been separated from weaving, and the reason now seems to lie in the advantages of specialisation, combined with the fact that in the majority of cases men of different capacities are needed as organisers by each branch of the industry. For the counts and qualities of yarn produced at Oldham, for instance, the market is so developed that no pressing need is felt for high commercial ability in the mills. So far as the commercial mind is needed, it must be one more efficient in dealing with matters of large general policy—such as the scale of the industry and the nature of the product in the future for which provision will have to be made—than in coping with details relating to present orders and the means of extending a private market. This statement, of course, is subject to exception. On the other hand, the conditions of "manufacturing," that is weaving, are different. Even in the case of the best-known and simplest cloths, marketing must be more difficult than in the spinning industry; for the cotton market is capable of higher development than the yarn market, and the latter than the cloth market, since the greater the number of variable elements in a product the less developed can the market for that commodity become. Hence in manufacturing it is frequently more disastrous for the organiser to be lacking in commercial than in industrial ability. The last few years, therefore, have seen again some separation of spinning from weaving, and each branch in consequence developing in its own way. For manufacturing some classes of goods economically an employer needs to market cleverly, to know what order he can take, what order he can get, and when exactly he can deliver; to have a new

warp in the loom for a piece on order as soon as the work in hand is completed. This implies a minute knowledge of machinery and hands, of what they can do, and of the stage to which the work in hand has progressed; a knowledge which is seldom consistent with the management of very large works. The making of private markets is essential to the successful prosecution of some branches of manufacturing. And when goods cannot be produced for stock it requires very clever marketing indeed to keep the productive capacity of the weaving-shed and the order-book in such close and continuous contact that the machinery standing idle is a minimum and the time of its idleness a minimum; and to do this without disobliging customers, while the prices realised are kept at a maximum on the whole and a minimum of business is refused; to do this, moreover, when the machinery runs only a fixed number of hours each day, and working double shifts at any time is impossible. Hence men with little capital rent buildings and "turning," and produce successfully in a small way. Sometimes several firms may be found in one building; and it is not unusual for joint stock companies to be formed partially for weaving, but partially to acquire and lease sheds and power, so as to avoid the danger of depending entirely upon one specialised business in which inefficient management would at once cause failure. In general we may say that, largely because the markets with which spinning and weaving were respectively connected were roughly of the same form in the first half of this century, it was then economical for the two processes to be carried on under the same management, as the cost of marketing and transporting a great deal of yarn was thereby saved; but that when the common market (that for yarns) and the market peculiar to spinning (that of raw cotton) developed, while the one

peculiar to weaving (that of cloth, which is a compound of a greater number of markets than are united in those of cotton and yarn) failed to develop, the two processes, spinning and weaving, required in some cases different kinds of organising capacity and so tended to drift apart. Whether both spinning and weaving are conducted by any one firm to-day depends upon a balancing of the advantages and disadvantages indicated above, and the weights of these vary with the characters of businesses.

So far, in considering the division of businesses in the cotton industry, we have noticed some of the localising forces that have played upon various branches of the cotton industry, and, moreover, certain of the conditions by which spinning and weaving have been rendered on the whole mutually attractive or mutually repulsive. It will now be of some interest to observe in general the directions of those lines of division that have disintegrated the great Lancashire industry and to search for the laws of their direction.

Divisions between industrial businesses may indicate a distinction between processes or a distinction between the classes of finished goods to which a variety of processes leads. Thus on the industrial side alone, carding, drawing and roving, spinning, twining, weaving, bleaching, dyeing, printing and finishing, might each appear as a distinct business. In that case we should have division by processes. The spinner would spin only and spin all counts. Or, on the other hand, we might find as the result of development one business producing fine prints, another confining itself to coarse twills, still another making muslins, and so forth; each business working at every stage in the production of the class of goods that it specialised in manufacturing, from mixing, cleaning and carding the cotton, to finishing the fabric for the consumer. As a matter of fact differ-

entiation has followed both these lines—those between processes and those between classes of finished commodities—but in different industries and at different times the general direction of the main lines of division has been by no means identical. Thus in the Yorkshire worsted industry combing is frequently a distinct industry, while spinning and manufacturing are as a rule conducted under the same head. Again, taking the woollen industry as a whole, the cloth is sometimes finished by the manufacturers, whereas in other cases, and those the most numerous, the cloth is passed on to a separate business to be finished. In Germany, except at Aachen, finishing is more universally a separate industry than in Yorkshire. And in Yorkshire there is a clearly defined line between the businesses at work on different qualities of goods. In the cotton industry all the processes up to spinning are invariably associated, but twining is sometimes found as a separate business. Weaving and spinning are sometimes united and sometimes not, while the dyeing of yarns may take place under the same management as the spinning and manufacturing, or it may be delegated to a mere dyer. Calico-printing stands quite apart. As to division by the nature of goods, that is so unmistakably marked as to require no special mention.

We cannot pretend to offer an explanation of these diverse phenomena in detail, and the fact that the outcome of past influences is, throughout the industry, mixed up with the most recent results of modern tendencies leaves one frequently in doubt as to the exact nature of the facts of any period for which an explanation is to be sought. But on the whole perhaps we might argue in this way. The striking economies associated with the specialisation of processes will tend to appear as soon as organisation in the industry as a whole is capable of holding

the disunited processes in satisfactory contact. For the division between kinds of work which is implied by the specialisation of processes is of a fundamental character. But division along these lines will be conditioned by the dependence of excellence in one process upon an excellence in the performance of the process antecedent to it which cannot be easily detected in the half-finished commodity. Thus, to insure good weaving and good spinning in very early days, the weaver had to be made responsible for both, since inferiority in the cloth might have been occasioned by bad weaving or bad spinning. If adequate tests of half-finished products can be applied the cohesion between the two processes weakens; but yarns, being wound, obviously cannot be tested except at the extremities of each length. As an industry developes and attempts are made to produce higher qualities of goods, it is possible that an old division between processes that was satisfactory for the rougher commodities of earlier years may be rendered unsuitable; and certainly there are firms to-day, depending upon the high reputation acquired by their goods, who do everything for themselves from the mixing of the raw cotton, lest inadvertently, through altered mixings or inferior work at some stage, their goods might be reduced occasionally in quality and their markets be damaged in consequence. Undoubtedly in the woollen industry, and in the cotton industry also though in a less degree, much can be done in the way of improving fabrics by businesses assuming control of all the processes involved in their production with the object of closely adapting them to each other. In the manufacture of woollen clothing fabrics, we have recently been informed, the best results can only be attained by the finishing even being studied in close relation to the spinning, twining and weaving. In Lancashire, no doubt,

the very distinct separation of the production of grey cloth from the processes following it has been occasioned partially by the development of means by which production is kept in close touch with demand. The Manchester warehouseman and the shipper find it easier to meet the requirements of customers fully and rapidly if they are left with a free hand and a wide choice as to the finishing work to be done on their purchases of grey cloth. The reason is apparent, and it would only prove tedious to explain it in detail. No manufacturer could hope to finish a given piece of cloth in every possible way; hence, if the finishing is done elsewhere, the cloth purchased from any manufacturer is potentially a greater variety of finished goods. It is easy to fall into the error of taking too mechanical a view of division of labour and division of business. Industries presenting the least external appearance of specialisation may be the most developed.

Taking a broad survey of existing conditions and the lines of their development in by-gone years, we cannot but be struck with the changes that have taken place in the magnitude and organisation of typical businesses in the cotton industry. The factory system having made its start, as the years rolled on businesses on the whole assumed constantly larger proportions. The increasing size led to advances in internal specialisation, but to this movement there was obviously some limit. That the attainment of such a limit was being commonly experienced is probable from the splitting of the industry into sections. For such divisions of the industry the internal specialisation of big businesses prepared the way. If we are asked why the big business ever acquiring new economies by intenser division of labour within, did not expand with the growth of the industry, continue its internal concentrations but maintain its hold on all

branches of the business, and by the economies thereby secured—for its scale of production would in time be enormous—drive competitors from the field and, for that reason again, still expand,—if we are asked this question one answer to offer is that only within close-set confines does the cost of production within a business vary inversely as the scale of production. These confines are a function of the character of the industry. Thus we may lay it down as a rough approximation to the truth that in each industry and branch of an industry a typical magnitude tends to be attained. When this magnitude is surpassed the waste involved in defective supervision begins to counterbalance the economies of further specialisation. And just as the thought of the captain of industry may be spread too widely so it may be concentrated too intensively. Divide a business, and, the leader's mind being directed to a narrower sphere of problems, the adaptation of means to ends will tend to be closer than it was in the larger business. Yet there may be loss—that is a higher cost of production—for in the smaller business the range of possible adaptations is less. To find the most suitable magnitude each lively business is groping to-day.

It would prove interesting, and no doubt profitable, to enter fully into the circumstances by which the magnitude of businesses is determined. One obvious check upon growth is set by the difficulty of attracting capital. The power to attract capital is a condition of success and varies as success. It will not be beside the mark to notice in passing that capital is more easily attracted into strange industrial hands to-day than it was some years ago. We possess to-day a more developed credit agency. Information is more widely spread and is in many cases more trustworthy; and to the enterprise of which there is

knowledge credit can more unhesitatingly extend. Through the discounting done by mercantile banks, through bank advances and in a variety of other ways, the means of making further productive expenditure can be raised. Further, through partnership, or the transformation of the business into a company, the old head being secured in his control, that capital can be drawn upon which is offered only with some degree of oversight in its use on the part of its owners. Again, it need scarcely be observed, a condition of growth is a power to attract the market.

So much may be said of the growing stages, but the question remains as to the final limits imposed upon growth. These, in so far as they are not consequent upon the peculiarities of individuals, may be defined as functions of (1) the internal complexity of arrangements,[1] including the effect on the cost of production of subtle differences in the quality of the factors in production; (2) the importance of quality in the output; (3) the expensiveness of the machinery used; (4) external relations depending upon the nature of the markets touched; (5) stability in the demand for the output; (6) the stationary character of the industry in respect of methods or otherwise; and (7) the extent of the economies to be secured by producing on a large scale. It is obvious, for example, that the typical business could not be large in an industry which required for leaders men of some scientific knowledge, which was passing through the throes of changes in method, which was subject to fits of depression, in which waste could be great were supervision not close and the skill of a number of the workmen not high, and a business, moreover, the products of which did not sell themselves. In short every man's power of work

1. By limiting and standardising the product Americans have rendered possible an enlargement of the scale of certain industries—we may take as examples the Baldwin Locomotive Works, the Pencoyd Bridge Works, and the Waterbury Watch Company.

is limited and the more intense, varied and urgent, the claims that are made on a master's attention, and the less control can be delegated, the smaller is the area of work which he can effectively control. In the various branches of the cotton industry these influences will be found at work.

The reader must not mistake the doctrine that is laid down above. Nothing more than a general tendency very slowly working itself out under circumstances that ever change can be said to exist. No one man has the same capacity as another, and where one man can control a business with a thousand hands another man in the same business may be unable to attain moderate efficiency with as few as 500. Moreover, humanity is marked by national characteristics: the American, it is said, is more eager to push on to big things than the typical Englishman.

This reference to the personal conditions of success in business points to another reason why a few businesses have not rapidly absorbed the market. It is that human life is short in duration and that what one man makes another man may fail to develop. In one generation an industrial leader may have risen to a commanding position by virtue of his own genius. In the struggle for survival in the economic universe he has demonstrated his fitness, trained it and strengthened it. But the choice of his successor cannot be determined in the same way, that is by the free play of the law of substitution. He is probably a son or relative; his training may have been excellent but there is little chance that in any special sense he is a picked man. He is not at the head of affairs as a result of a process of selection and testing. True, the old head leaves behind him a well-chosen and well-drilled staff; but the staff changes in time; and meanwhile natural selection is doing its work in the business world

around, though its operation is in abeyance in the business in question. Thus a very large business, possessed of magnificent internal economies in the way of specialisation both industrial and commercial, may be checked in its absorption of a larger portion of the market through its management falling in quality below the level maintained among the leading businesses around it. On the whole the generalisation is true that the life of a business is three generations. The third generation may perhaps be lived out in the form of a joint-stock company. The business might be of a character unsuitable for initiation by joint-stock enterprise; but to take over a going concern, with the object of extracting as much profit as possible from the goodwill which it enjoys and which dies hard in most industries, is very different from attempting to fight one's way to a place in the market under the guidance of a paid manager who is subject to the supreme direction of a board of management.

Is our view, then, that joint-stock enterprise must invariably be inferior to private management? By no means; the nature of the business, the conditions of the industry as a whole and the demands made upon capital, must be taken into account. If the time does not fall in an era of revolution in methods, when many new ideas, some good some bad, are tending to draw the industry in a variety of directions, and if the markets flanking the industry are moderately developed as described above, then the joint-stock system, with the easy control of capital which accompanies it, may prove highly effective. Emphasis is laid upon the commercial functions not being of a complicated and subtle character, because it is hard to select from applicants for the post of manager a man who has the power to appreciate subtle situations and deal with them satisfactorily. Past success, in business on his

own account, can seldom be used as a test, for if he has succeeded the chances are that he will not be an applicant for a salaried post. Commercial capacities are of a peculiar character and are not easily detected; they are, so to speak, capacities that must find themselves. For analogous reasons we have argued that the days of revolution in an industry are not as a rule flourishing days for corporate management. It is as impossible to pick out from fifty men before you the man to choose the right change in method at the right time as to point out the man who will make a market for a business. Again we have a capacity which must find itself. But, on the other hand, the bigger the business—and companies tend to be bigger than private businesses—the more capital is there for making experiments, and, the experiments made being many, the less chance is there of ultimate loss. The system of joint-stock companies in which the liability of the shareholders is limited offers peculiar advantages. It has directed broad streams of capital into industrial undertakings; for the risks are limited by liability being limited and by the fact that the shareholders may, through their representation on the board of management, watch and in a degree control their investments. On the industrial side there is an advantage also in that for desirable developments the capital can be found, if the business is suitable for corporate control.

We have been led into this somewhat close analysis of joint-stock arrangements because in no industry do they flourish more extensively than in the cotton-spinning business. A great deal of the cotton-spinning which is done in England and elsewhere is being conducted by firms which began under joint-stock management. These firms increased largely in numbers in this country between 1867 and 1877 (more especially in the period 1870—4).[1]

1. The Limited Liability Acts gave the opportunity.

In the cotton district the joint-stock system has spread more widely at Oldham than elsewhere. The chief cause no doubt consists in the fact that the success of spinning concerns occupied in producing Oldham counts is not so closely dependent on the ability, alertness, and enterprise of managers who cannot be selected by simple tests as is the success of the majority of other businesses. For spinning in Oldham, in consequence, capital can be raised in shares from all parts of the country more easily than it can for weaving.[1] Hence the fact that small manufacturers are financed largely in Manchester; and hence the fact that co-operative spinning-mills have sooner or later fallen into the ordinary joint-stock system, while co-operative weaving businesses have frequently split up into several distinct private undertakings.[2] And, further, it must be remembered that the smaller amount of capital needed to manufacture on an economic scale renders competition keener in weaving than in spinning.

Let it be clearly understood that there are various types of joint-stock businesses. There is that which may flourish for a period in the later life of a business, and there is that which starts on its own account. There is, moreover, that in which the salaried official is the dominant leader, and that in which the manager's position is more subordinate, some leading director or some small group of directors undertaking the control of the higher functions of the business. The last-mentioned type has been coming forward prominently in recent years. When joint-stock action lends itself to this type of organisation another business becomes specialised, namely the business of laying

1. The contrast between spinning and manufacturing (weaving) as regards the formation of companies is not peculiar to England. In Germany, for instance, I find from a recent report that while there were 71 joint-stock companies in 1899 in cotton spinning and combined spinning and weaving, there were only 18 such companies in the weaving branch of the cotton industry in the same year.

2. See Reports, etc., 1892, xxxv. Group C, 2551 *et seq.*, and 2562 *et seq.*

down a policy on broad and far-reaching lines. The classes of business control that exist must be distinguished. There is the control of the factors of production, with the object of getting the best from them; there is the decision of when to adopt new methods, when to "scrap" antiquated fixed capital, and so forth. There is the matter of buying and selling. There is the policy as to prices, short-time and wages; and there is in addition the large question of when to expend capital for the future, when to expand, and when to push in foreign markets, which involves far-reaching anticipations as to future events and estimates of demand and supply and the prospects of the industry in other places. For the performance of certain of these functions an expert in detail is required; but for others a man of quick apprehension, sensitive to the signs of economic changes, who is capable of isolating broad issues, analysing them and forming a judgment on evidence laid before him. He must be a citizen of the economic world who can detach himself from detail and observe things as a whole and as changing. It was said of an American politician that he could see a fly on a barn door a mile away without seeing either the barn-door or even the barn. Such a man might have made a splendid works' manager, but he would have been incapable of laying down a business plan of campaign.

The differentiation of the particular business function which we have referred to above, and which has been brought about almost entirely by joint-stock organisation, is one of the chief causes of the appearance and successes of "trusts" and similar combinations at the present day. The business politician, as we might term him, being liberated from the responsibilities to which his attendance previously had been a condition of his serving as a business politician at all, has been enabled to extend the sphere of

his operations. Moreover, for complete success an extended area of control became in many cases essential. To plan a campaign with a single regiment is a very different matter from planning a campaign with adequate military forces. Hence one reason for the "trust:" though, indeed, huge undertakings do not necessarily imply the "trust" as that term is commonly used. The term "trust" is usually applied to combinations of businesses "made or formed with the intent, effect, power, or tendency to monopolise business, restrain or interfere with competitive trade, or to fix, influence or increase the price of commodities," as Mr. Dodd, the attorney to the Standard Oil Company, has phrased it.

Of trusts in this sense examples are to be found in the cotton trade and analogous businesses. There are the Fine Cotton Spinners' Association, J. and P. Coats (manufacturing sewing cotton), the Bleachers' Association, the English Sewing Cotton Company, the British Cotton and Wool Dyers' Association, and the Calico Printers' Association. Of these the first two have been the most successful, while the last three have hitherto been the most unsuccessful. The causes for such depression as is being felt by some of the trusts might be many. Trade may have been bad in these businesses in the last few years, or trade may have been badly managed. The new régime may have affected costs of production unfavourably; in periods of change little economies are overlooked and mistakes are made. Some confusion is experienced for a time, and this is not conducive to efficiency, and change means expense. Again, some of the businesses may have been bought into the combination at an excessive price and the whole combination may have been seriously overcapitalised. Again, all businesses are not equally suited to the trust form of organisation. The reader must be

left to discover by his own researches which of these causes have been mainly operative in certain of the cases before us.

Of the combinations mentioned above only the Fine Cotton Spinners' and Doublers' Association falls properly within the compass of this work. It was founded in 1898, and in the four years from 1899 to 1902 it paid dividends of 8, 8, 9, and 8 per cent. In 1902 it included 47 businesses, and by securing control over certain businesses abroad it has done something to extend its monopoly beyond the British Isles. Inasmuch as fine yarns are required in large quantities for sewing thread, Messrs. Coats have made large investments in the Fine Cotton Spinners' Association with the object of obtaining some control over their supplies of material.[1] This policy of stretching back, to make certain factors in production secure, is distinctive of the trust. The United States Iron and Steel Corporation, for example, owns fields of ore and coal mines, fleets of vessels for the carriage of ore along the great lakes, railways and rolling stock. Numerous other examples could be quoted from England and other countries. The Fine Spinners themselves have favoured this policy, and in 1900 they acquired a coal mine to mitigate the effects of any high prices of fuel upon their cost of production.[2]

I am not sure that condemnation of attempts to establish large undertakings, which may restrain competition in a more or less degree, has not been a little indiscriminating. The essential characteristic of these combinations must be distinguished from the actions of particular trusts. Certainly they bring with them some menace to the community, but they may work in the

1. *Business aspects of British Trusts*, an article by H. W. Macrosty, in the *Economic Journal*, 1902.

2. Ibid.

interests of the community under certain conditions. It would be dangerous, however, to encourage combinations, and free trade would appear to be essential if the public is to be guaranteed immunity from extortionate increases in price appearing as a result of combinations. When home competition is liable to be temporarily in abeyance, the corrective of foreign competition is all the more needful. "Trust" management undoubtedly in a variety of trades effects substantial savings. For example, much of the heavy cost of advertising and marketing is avoided; but it is noticeable that in the cotton-spinning industry this charge is only nominal. It is only nominal because the cotton-spinning industry is flanked by markets which are fairly developed. And fairly developed markets constitute a condition favourable to success in the case of management by companies. Therefore this condition, while rendering "trust" management easy, prevents one of the savings associated with combinations from proving substantial in amount. But, even granted that in certain businesses and under certain conditions the combination produces at the lowest attainable cost of production, the balance of advantage in the long run may rest with the system of many businesses keenly competing. In the latter system, there seems little doubt, a stronger and more continuously acting principle of improvement is secured. For natural selection operates among would-be leaders, and those actually leading are compelled to act with energy by competitive pressure from beneath and from all sides. In periods in the history of certain businesses, combination of some character may appear and benefit the producers and possibly the consumers also, but ultimately, in the majority of cases in a healthy society, competition will again force itself in and disintegrate the combination or necessitate reform and restore its efficiency. It would be

folly of the worst kind to encourage the circumstances under which impediments would be thrown in the way of such a reaction. Perhaps I may venture to close this discussion of industrial organisation with a quotation from myself:—"If advance means differentiation, the future will see more varieties in our industrial arrangements. Simple industrial systems are suitable only for a primitive people. Uniformity in industrial arrangements implies a lack of personal individuality, or a lack of opportunity to express it, which is hardly consistent with rapid advance. The existence, side by side, of innumerable industrial forms in competition—private businesses, large and small, joint-stock companies, perhaps even if combined, co-operation and co-operative association as regards certain functions of competing business, people's banks, private banks and banking companies—is a sign of a vigorous, imaginative, and progressive people."[1]

1. *Producing Co-operatively: a Historical Review and an Anticipation.* An address to the Labour Co-partnership Association in 1904.

Distribution of labour between spinning, weaving, and other processes.

From Factory Inspector's Return, 1898.

These figures relate to 1896.

	Number of factories or departments.	Outstanding returns.	Children employed as half-timers.		Persons under 18 employed as full timers.		Persons over 18.		Total.		
			males.	females.	males.	females.	males.	females.	males.	females.	total.
COTTON	3141	16	13,185	16,321	41,355	80,061	149,146	232,852	203,686	329,234	532,920
1. Spinning.....	1344	12	5,580	4,395	22,243	30,115	71,440	78,690	99,263	113,200	212,463
2. Weaving.....	1613	3	7,543	11,873	18,786	49,185	75,813	151,341	102,142	212,399	314,541
3. Other processes	184	1	62	53	326	761	1,893	2,821	2,281	3,635	5,916

CHAPTER IX.

Trade Unions and Employees' Associations.

Early Days and the Transition Period.

Among the cotton weavers continuous associations certainly existed, although they may not have flourished, as early as the middle of the eighteenth century. In the Manchester Constable's accounts under the date February 15th, 1754, mention is made of the apprehension of some person for entering into the weavers' combination; and in the same records for 1759 we read that twenty-one worsted smallware weavers were sent to Lancaster "for combining against the manufactury." Further, a proclamation was issued, on January 8th in the same year, declaring that combinations to raise wages were illegal and that all who took part in them would be deprived of their employment and prosecuted.[1] A copy of the rules of these worsted smallware weavers, printed in 1756, is in the Manchester Library. One of the articles is assigned to so early a date as August 15th, 1747, and in the preamble it is stated that an informal club had existed for many years. These are not the only examples of

1. Manchester Constable's Accounts, edited by J. P. Earwaker, Vol. iii. pp. 106-7. The proclamation appeared in *Harrop's Manchester Mercury* for January 9th, 1759. The following are the entries in the accounts:—

1759, Feb. 8th.	To nine foot Messengers to Lancaster with twenty-one Worsted Smallware Weavers to Lancaster for combining against the Manufactury	£6	15	0
	To maintaining them upon the way	2	2	0
	To their entrance fees	1	1	0
	To one horse Messenger	2	2	0
	To their maintenance all night in the House o' Correction	1	1	0
	To more maintenance on the road		5	0
	To expenses of Assistance and Wages apprehending and attending them at Manchester	1	1	6
	To two carts carrying the twenty-one Weavers to Lancaster	7	17	6

combinations far back in the eighteenth century. In 1758 the check-weavers were being solicited "to enter into a box to oppose the unlawful practices of the masters";[1] and in the same year the Oldham weavers were advised by the Manchester tradesmen to "quit their box."[2]

When the spirit of competition had entered into the trade, and constant changes were being effected in industrial and commercial methods, combinations among weavers living in the same village naturally formed themselves. "For a long course of years," said an operative writing of the Paisley weavers, they have "associated in a friendly manner in societies' denominated clubs." They were to be found, he added, in groups of from thirty to fifty "in every decent public-house" once in the week, generally on Saturday, discussing the state of trade and any differences that had taken place between manufacturers and operatives.[3] Many friendly societies sprang into existence about the same time, and many clubs were both friendly societies and trade unions. "These clubs," reported the Parliamentary Committee of 1825 appointed to investigate friendly societies, "were in very many instances composed of persons working at the same trade; the habits and opportunities of association, which the Friendly Societies gave to them, doubtless afforded facilities of combination for raising wages and other purposes, all of which were then unlawful, connected with their common business."[4] The Oldham society, in 1758, was a mixed club, for its members argued, "if the weavers sign to withdraw their subscriptions from the boxes they will at the same time withdraw their charity from one another." Most alliances to raise wages cloaked themselves under

1. *Letters on the dispute between the check-makers and their Weavers*, 1759.
2. Resolution of the Oldham Weavers, August 18th, 1758.
3. *An Answer to Mr. Carlile's Sketches of Paisley*, by Wm. Taylor, Paisley, 1809 (quoted from Webb MSS., Textiles, iv. 4).
4. See also Baernreither's *English Association of Working Men.*

the rules of friendly societies after the encouragement given to thrift by Rose's Act in 1795, when the misunderstanding at first created as to the intention of the legislature had been removed.[1] Lancashire alone had 820 registered societies in 1800–1—over 200 more than any other county. If a distinction between thrift clubs and trade unions was observed in some cases, the connection between the two remained close. During the great strike in Scotland in 1812 funds were obtained largely from the friendly societies,[2] and many of the local meetings which were called to choose delegates for the council of the wide-spread spinners' union in Lancashire in 1810 were held under the sanction of friendly society rules.[3] We can well believe, therefore, that the author of *Observations on the Cotton Weavers' Act* (1804) is not speaking without knowledge when he asserts that "these clubs have become the very focus of cabals and dissatisfaction (as heretofore they were of disaffection). Under the mask of the name and exhibition of nominal rules, the workmen meet together in classes according to their trades, and hold communications with their brethren at home and at remote distances. Their contributions, in many instances, have been so great, as to have afforded subsistence to such a number of them as it was agreed should turn out against their masters." It was a common complaint at the time that the magistrates had created trade unions by sanctioning the rule enabling the friendly societies to maintain their members out of work, though the magistrates had never intended it to apply to those voluntarily out of work. The Committee of 1824, in the ninth resolution of its report, drew attention to the point.

1. At first it was supposed that their funds were to be placed under the direction of the magistrates (*Observations on Friendly Societies*, by Sir F. Eden).
2. Reports, &c., 1824, v. pp. 510, 515 and 519.
3. The societies of spinners at Manchester, 1795, and Oldham, 1796, were registered.

Hence the provision, so common to the printed articles sanctioned by the magistrates, that any who combined together to raise their wages should be expelled from the society, cannot be accepted as a trustworthy indication of the limited objects pursued by the early associations.

The spirit of combination was intensified, if not created, by the dissolution of custom and the fall in prices. This, however, as regards some qualities of goods, did not occur until the end of the eighteenth century. The same cause, invention, which by bringing the weavers into closer proximity made combination easier, gave them also an incentive for combining. The worsted smallware weavers, in the preamble to their regulations and orders, stated that the need of an association for rigorously enforcing apprenticeship rules arose from the introduction of engine-looms by which much labour was saved. When the fly-shuttle was making its way into use the prices of cotton fabrics declined on the whole; but the fly-shuttle "was not much used among the cotton weavers until 1760."[1]

As early as 1758 certain weavers had suggested an Act of Parliament to enforce apprenticeship rules and a definite length of piece. The object of the second part of the proposal was to prevent the masters from reducing the weavers' earnings, not by lowering rates per piece, but by adding covertly to the length of warps.[2] Twenty-two years later the local weavers' club in and about Glasgow united with the intention of securing an uniform list; but the amalgamation was short-lived and achieved nothing. In 1787 it was formed again, but only to break up almost immediately after, for no penny post and railway system

1. Guest, p. 9. The assertion is made on the evidence of a manuscript lent to him by Samuel Kay, son of Robert Kay.

2. Appendix to *Letters on the Disputes between the Manchester check-makers and their weavers*, 1759.

existed then to hold the clubs of different places together. In England also widespread combination was entered into. A union consisting of the operatives of Bolton, Manchester and Salford, Stockport, Oldham, Wigan, Warrington, Blackburn, Chorley, Newton, Bury, Whitefield, Chowbent, and New Chapel near Leigh, which was joined shortly after its formation by Ashton, Preston, Ripponden and other places of less importance,[1] was established, but its career was brief. There is small reason to believe that such trade unions as existed among the weavers exerted any considerable influence. They were extremely difficult to form and to hold together, since many of the weavers who had to be included did not live in villages or towns, but were scattered far apart over the countryside. Moreover, they had to strike against masters whose fixed capital was little or nothing and who could therefore resist with much less loss than could the owners of factories filled with expensive machinery. Certainly some evidence exists to support the view that the early combinations were effective—once, it is asserted, they forced rates up by as much as 45 per cent.—but the facts of the matter appear to have been, that they seldom secured higher rates, that higher rates when secured were never observed for long, and that any higher rates that were obtained were adherred to only by the larger manufacturers as a rule and that one effect of this was to cause the trade of many petty manufacturers, who paid low prices, to spread at the expense of those who paid better.

It was partly the spirit of the times, but it was partly also the repeated failure of attempts at self-help, which caused the constant appeals to the Government for measures to improve the weavers' position. As a result of the many petitions, which emanated from some

1. Radcliffe, 72-7.

of the masters as well as the handicraftsmen, an Arbitration Act was conceded in 1800. By this Act the Government seemed to recognise an obligation to protect the value of the weavers' property in their skill, and the weavers were certainly under the impression that the measure was intended not merely to prevent prices from falling further but also to raise them. In this belief they hopefully set to work to secure the benefits which the Act appeared to promise.[1] One master had 108 notices of arbitration served on him in one day, all by the same man,[2] probably the secretary of some formal or informal trade union. The magistrates, however, decided that the Act was never meant to be used as the operatives expected it to be used,[3] and the Government either acquiesced in this view or had changed its mind when it amended the statute in 1804.[4] After 1804 it was definitely

1. Reports, etc., 1802-3, viii. pp. 933 and 958. The mistake was natural enough, for the Act 39 and 40 Geo. III., ch. 90, declared that it applied—"Where the masters and "workmen cannot agree respecting the price or prices to be paid for work done, *or to be "done*, in the said manufacture, whether such dispute shall happen or arise between them "respecting the reduction or advance of wages or any injury or damage done, or alleged to "have been done, by the workmen to the work, or respecting any delay, or supposed delay "on the part of the workmen in finishing the work or in not finishing such work in a good "and workmanlike manner; and also in all cases where the workmen are to be employed "to work any new pattern which shall require them to purchase any new implements of "manufacture for the working thereof, and the masters and workmen cannot agree upon "the compensation to be made to such workmen for or in respect thereof, and also "respecting the length of all pieces of cotton goods, or the wages or compensation to be "paid for all pieces of cotton goods that are made of any great or extraordinary length, "etc."

2. Reports, etc., 1802-3, viii. p. 926.

3. Reports, etc., 1802-3, viii. pp. 927-30.

4. 44 Geo. III., c. 87. This Act, and such sections of 39 and 40 Geo. III., c. 90, as were still in force, were repealed by 5 Geo. IV., c. 96, which remained in operation till the passing of 59 and 60 Vic., c. 30, though it was amended in 1837, 1845, and 1846. The Act 5 Geo. IV., c. 96, consolidated and amended the laws relating to arbitration between masters and workmen, but it remained on the whole a dead letter because the operatives disliked going before the justices and suspected that the sympathies of the latter would be with the masters. Moreover in case of dispute it was the common practice to withhold the whole of the wages due till the dispute was settled. (Reports, etc., 1840, xxiv. 612-3). To prevent the necessity of arbitration, masters would write on the tickets which had to be given out with work, "No wages promised. Weaving paid according to the manner the work is executed"; and sometimes the law was set aside by agreements for a small sum in any case and "one shilling extra per cut if work approved." (See Reports, etc., 1840, xxiv. 616-8.) By 20 Geo. II., c. 19, summary jurisdiction had been given to Justices in the case of disputes between masters and servants when the term of hiring was a year or longer, and the powers of this Act were extended to agricultural labourers hired for less than a year by 31 Geo. II. c. 11, Legislative attempts to encourage conciliation and voluntary resort to arbitration were made in 1867 and 1872 by the Acts 30 and 31 Vic., c. 105, and 35 and 36 Vic., c. 46. The latest Act is that of 1896, and this has already achieved success, largely in extending the system of conciliation.

understood that in the matter of new agreements as to the rate of wages the magistrates had no power to interfere. The weavers, therefore, appealed again to the Government and again received the support of numerous masters. The committee appointed to consider their case, however, reported that the minimum wage was "wholly inadmissible in principle, incapable of being reduced to practice by any means that can possibly be devised, and, if practicable, would be productive of the most fatal consequences."[1] With this opinion the Committee of 1810–11 agreed; and both committees regarded the other suggestions made by the weavers as open to similar objections. For though the operatives who were examined by the committee of 1810–11 left the expedients, by which the value of their property was to be enhanced, to the Government, they advised—as they had advised before—the imposition of a tax on steam-looms and strict apprenticeship regulations in addition to the minimum wage.

Meanwhile the weavers had re-established the amalgamation at Glasgow, and when the Government reiterated its refusal to do anything for them, they tried to induce the masters to agree to some arrangements for the joint regulation of the trade. The attempt failed, and the weavers thereupon proposed to have wages fixed by the justices under Acts practically obsolete but confirmed in the reign of George II.[2] Their first steps met with unexpected success. A trial at Edinburgh in 1812, on the motion of the employers[3] questioning the magistrates' right of interference, ended in the triumph of the men. The magistrates were permitted to draw up tables of reasonable prices, but, upon their

1. Reports, etc., 1809, iii. p. 311.
2. The Government re-affirmed its decision on the question of the minimum wage by repealing these Acts in 1813.
3. 40 leading houses were parties to the action, and 1600 to 1800 weavers were pursuers.

assuming the responsibility, the masters retired from the proceedings. One hundred and thirty witnesses were heard; and as some of them belonged to trades other than weaving we may infer that the cotton operatives would have been satisfied if only they could have secured a subsistence wage to be measured by the needs or wages of other labour of the same grade. However, they secured nothing, for when the rates were ultimately decreed, after £3,000 had been spent by the weavers, the masters refused to observe them, and they could not be compelled to do so because counsel for the operatives, in deference to the wishes of the Court, had withdrawn the imperative part of the prayer, and the decision of the Court, therefore, had been merely permissive and not binding. Then in desperation, from Aberdeen to Carlisle, 40,000 weavers struck. For three weeks the turn-out continued, and it was only the arrest and sentence of five leaders for the crime of combination which prevented it from lasting longer.[1] The weavers of Carlisle, as well as those of Glasgow, had appealed to the Courts, but it was agreed that the case of the former, which had been taken by the masters to the King's Bench, should await the outcome of the Glasgow weavers' action; and when the Glasgow men were forced to fight the battle anew on another field or allow themselves without a struggle to be robbed of the fruits of a costly victory, the men of Carlisle had struck also, for it was plain to them that then or never were the rates which would yield a living wage to be secured.[2]

In the movement for the fixing of wages at Glasgow, certain masters co-operated with the men. Many masters at that time were in agreement with their

1. Whitbread had advised the weavers to combine and get what they wanted for themselves.

2. On the whole of the above matters see Reports, 1824, v. pp. 59—64, 509—21; Richmond's *Narrative*, pp. 14—22.

hands upon all the main issues, and even took the initiative. It was the masters and not the working weavers who called the meeting at Bolton in 1804, from which emanated two of the many petitions of the period, one of which was signed by 130,000 operatives and the other by 101 employers.[1] Again, in 1808, some 350 masters, acting on the advice of Perceval, entered into a compact to maintain certain minimum prices. An Act of Parliament had been promised if the "little masters" succeeded in pulling down the agreed rates, but, although the agreed rates were soon neglected, the bill was never brought in. The movement for checking in some way the effects of competition was continued far into the nineteenth century. In 1826 certain masters who had grown alarmed at the "sixpenny down race," as Radcliffe called it, and by which was meant the repeated reduction of another sixpence from the price of a piece, formed themselves into a committee to bring about the regulation of the trade.[2] Their efforts appear to have been almost entirely ineffectual. Nine years later, however, there seemed a prospect of the advocates of control under the sanction of the State carrying their proposals. In 1835 the committee formed to consider the condition of the hand-loom weavers actually recommended the adoption of Fielden's bill for the determining and enforcing of minimum rates,[3] but the House refused to legislate after the attacks on the bill by Poulett Thompson, Dr. Bowring and Joseph Hume.[4] That the report of the

1. These petitions secured the support of the London Merchants.
2. On all the above see Radcliffe, pp. 115—7; Reports, etc., 1808, ii. pp. 106, 129; 1810—1, ii. pp. 399—400; 1833, vi. Q. 11837—9; 1834, x. Q. 7670 *et seq.*
3. The weavers suggested three arrangements:—
   1. A central Board of Trade to fix prices.
   2. Local Boards to fix prices.
   3. That returns of prices be obtained from manufacturers doing half the trade, and that the average of the prices paid by the majority of those paying highest be taken as the minimum wage.

   Fielden supported the third suggestion.
4. Hansard, xxix. July 28th.

Commissioners appointed to investigate the question further confirmed the House in its action will excite no surprise when it is remembered that two of the four Commissioners were Nassau William Senior and Samuel Jones Lloyd.

It is practically impossible to separate the agitations of this period that were economic in character from those that were political. Petitions upon the subject of Parliamentary reform were as frequently prepared as those upon the question of wages. Many weavers regarded Parliamentary reform as desirable for much the same reason as the wages board, the regulation of apprentices, or the suppression of machinery. If it is true that many of the early trade unions were hand in glove with the friendly societies, or even identical with them, it is equally true that the Jacobin clubs and Radical movements gathered strength from the economic convulsions of the times. It was among the handicraftsmen of the textile industries, both in England and Scotland, that the Government spies found the most fruitful ground for sowing the seeds of revolution.[1] Nowhere were the writings of Cobbett more popular than among the work-people of Lancashire; on some occasions the early factory operatives ran out of the factories when the coach arrived with the *Political Register*, and stood about in knots for some time devouring its pages before they returned to their work. The troubles which led to the suspension of the Habeas Corpus Act and the adoption of the six Acts were caused partially by the working of revolutionary influences upon the labouring classes and the awakening amongst them of political interests, and partially by the

1. It is beyond dispute that the Government spies helped to create the plots which they pretended to discover, and that many of the plots of which information was given never existed in fact. In addition to the Government Reports, see Richmond's *Narrative*, Bamford's *Life of a Radical*, and Prentice's *Historical Sketches of Manchester*.

miseries consequent upon the great war; but they were caused also by the disturbances involved in the establishment of a new economic order. The projected march on London by the working people of Lancashire with a petition for reform in 1817 was designed by the Radicals, but numbers of the deluded weavers who took part in the assembly at Manchester on the day of the start were actuated a great deal more by the failure of their petitions relating to wages than by a desire for manhood suffrage or any of the reforms advocated by the Radicals. The mad scheme was checked on the first steps being taken to carry it into effect. The meeting at Manchester was broken up: few of the Blanketeers set out on the journey at all: those who did start were overtaken by the yeomanry at Stockport and turned back; and of those who evaded the yeomanry none passed Derby. Again, two years later, of the thousands who took part in the Radical demonstration on St. George's fields,[1] no insignificant proportion were anxious only to bring back the good days of independence and adequate earnings in Lancashire. This was not the only occasion in Lancashire upon which economic and political motives were confounded. The situation during the days of Chartism was a repetition of the state of affairs in the early times of Radicalism. Many a working-man was a Chartist, a Free Trader in respect of corn, and a trade unionist, all with the same purpose in mind.

In early days the expedient usually adopted for "protecting" a trade took the form of apprenticeship regulations. Every trade limited its "learners," and no doubt the object of the limitations was partly educational. In 1756 the worsted smallware weavers allowed only three apprentices to each undertaker (that is, master weaver

1. On the occasion of Peterloo.

employing journeymen), and none to journeymen, and decreed that they should serve for seven years. This policy was acted upon by all the hand-loom weavers so long as their clubs existed, but they were seldom strong enough to secure the observance of their regulations.[1] No hint of such a policy, however, is to be found among the power-loom weavers. The tide was turning against restrictions of any kind, and the power-loom weavers being gathered from many callings possessed no common tradition, for the dexterity of the hand-weaver was not needed to work a power-loom.

The spinners also imposed rules relating to the number of apprentices, and in 1829 and 1830 at the Ramsey and Manchester Congresses, these were strongly emphasised, probably because competition was being felt at the time. It was then decided that no others were to be "learned to spin" than the sons, brothers, and orphan nephews of spinners, and the poor relations of the proprietors of mills. Thus something of a patrimonial system was to be enforced. The Glasgow spinners were even more exclusive and allowed only those who had been piecers in Glasgow "to enter a

1. The Associated Weavers of Scotland legislated on the question in the fullest detail in 1824, the same year in which the Manchester weavers passed laws "for the purpose of obtaining a proper remuneration for their industry." The rules of the former, which may be quoted here as a specimen, were as follows :—

No apprentices under 12 (except weavers' children).
Apprentices from 12 to 14 to serve 5 years.
Apprentices 14 and upwards to serve 4 years.
The master to receive half their wages, or, if he provide board and lodging, the whole of their wages.
Those who want to learn weaving only partially pay half their earnings, and if they learn,

1 year £15.
2 years £10.
3 years £5.

The Glasgow Weavers allowed only 2 apprentices to each master weaver besides his own children and ordered that those working for partial knowledge should pay

£20 for 2 years.
£15 for 3 years.
£10 for any period longer than 3 years but less than the full term of apprenticeship.

It was declared in evidence to the Commission of 1837 that the above rules were not acted upon. If it were so, the reason obviously was defect of strength, not lack of will. And there naturally was defect of strength among the hand-loom weavers when the power-loom was getting to work. Moreover weavers were too poor to get indentures (Reports, etc., 1839, xlii. p. 523). In England as well, the apprenticeship rules could not be enforced, and people were taking apprentices for two or three years for half earnings. See also Reports, etc., 1834, x. Q. 5639—44.

Glasgow mill,"[1] but later others were suffered upon paying exorbitant fines to the union.[2] The increasing length of mules was in no small degree responsible for the breakdown of apprenticeship among the spinners: more and more assistants on the machines became necessary. The new conditions were met at first by the spinners allowing only some of the piecers to learn to spin, but this arrangement naturally proved unsatisfactory, and in view of the changing spirit of the times it was bound to give way.

Among the spinners' early regulations an original device is to be found for stopping apprentices at the source. The Oldham rules of 1796 forbade the "boasting of getting a deal of money," and the Articles, Rules and orders of the Cotton Spinners of Manchester, dated 1795, penalised members if they told people who were not members "in a boasting manner" what money they had earned in a short time. That the authors of these rules had more in view than the discouragement of vain-glory, or the suppression of "driving," is evident from the fact that it was not the members of the society who were to be kept in ignorance. A hint of the correct interpretation is afforded us by the rules of the Manchester Society which argued that the practice of giving information to outsiders "has often been injurious to the cotton spinners." We may infer, therefore, that the real object was to withhold information which might have tempted others into the industry.

1. Asserted by Houldsworth, but denied by McDougall and Smith, in their evidence to the Committee of 1824. However, in 1829, at the Ramsey Congress, the Glasgow spinners were accused of this exclusiveness, and they opposed the proposal (which was adopted) to admit any member of the amalgamation to all districts (Report, 27—32). But the Glasgow hands returned to their old policy. Only members of the Glasgow Union were allowed to be employed in Glasgow, and by the rules handed in to the committee of 1838 (pp. 303 –6) only those who had learnt in Glasgow were admitted as members. Later, strangers were admitted to the union for extra payments and a heavy entrance fee. Reports, etc., 1838, viii. p. 306.

2. Members of the Renfrew Society were admitted to the Glasgow Union on the ordinary basis.

In the preceding pages of this chapter we have been led, by examining the apprenticeship regulations imposed by the cotton operatives in early days, to anticipate somewhat the course of events. We must now turn back some years to notice the beginnings of trade unionism among the spinners. They combined as soon as spinning became a separate industry for men, and this did not happen until conditions were already ripe for its organisation in factories. Societies did not appear, therefore, until quite at the end of the eighteenth century. The first was probably the Stockport Union of 1792. The Manchester and Oldham spinners enrolled themselves under friendly society rules in 1795 and 1796 respectively, and the Glasgow spinners were combined in 1810.[1]

It is partially true to say that trade unionism began anew when the factory became usual. The unionism under the domestic system and developments from it should be sharply distinguished from the unionism which formed itself when the operative became a mere employé and worked as an almost inseparable part of a complicated factory system. A real change was gradually effected in his economic position, and in deprecating an exaggeration of the fact, or the assumption that the change was for the worse from the point of view of the operative, we must be careful not to ignore a distinction which did prove highly significant. In short the handicraftsman had been in a large sense a unit in production, and he was transformed ultimately into part of a larger unit. Hence, while the earlier labour movements in Lancashire were aimed at "protecting the industry" and "fixing fair prices," the later ones, those formed among factory operatives, were organised in a new sense "against the masters." In speaking of factory operatives we do not

1. Reports, etc., 1824, v. pp. 409 and 611.

include all who worked in any kind of factory, for, as we have seen in earlier chapters, some handicraftsmen laboured in factories under the old régime. When the factory became usual trade exclusiveness weakened, but the disposition to combine was preserved by the close and continuous association of workers which factory-life necessitated. Hands who worked side by side in the mill naturally associated out of the mill. In fact much modern trade unionism appears to be traceable to informal "mill clubs" or customary gatherings in public-houses in which the operatives employed in two or more mills met.[1]

The first societies among the spinners, which were no doubt half of the old and half of the new order, do not appear to have enjoyed a very settled or continuous existence. The author of the *Quinquarticular System*, speaking of the Manchester spinners, asserted that they were united in 1810—probably the interest in the society of 1795 having died down, a revival took place in 1810—but that for eight years thereafter little or no money was paid to any union. In 1818, a new organisation, or the old organisation revived, but still under the registered rules of 1795 seemingly,[2] attempted to recover the reduction in wages imposed the year before, with the result that fifteen of their members were arrested, and most of the fifteen, after three or four months' imprisonment, were convicted of the crime of combination at a trial at which the whole

1. Compare with the above T. J. Dunning's account of the London Bookbinders Society in which he says that societies originally founded by the men for the purpose of "taking a social pint of porter together" insensibly took the form of trade societies. A brief account of the early trade unions is given by William Marcroft. Speaking of one Thomas Davies, leader in the turn-out at the Bank-side Mill in 1834, he says, "With much "seriousness he at times related the making ceremony of the union. The only qualifica- "tion to be a member was that he was a working man and that he worked in the Oldham "district, and he (had) to pay an entrance fee of 1/6 and other contributions as required. "The Central Union Club was held at a public-house known as King William, York Street, "off Manchester Street, Oldham. There were many other clubs in the town—Greaves "Arms, Grapes Inn, Red Lion, and other public houses." "The spinners' club," says Mr. Andrew, writing of Oldham in 1825 in his *Annals of Oldham*, "was held at a little "'public', . . . and after a 'draw' it was usual for the spinners to spend the Monday "after the pay-day in ease and delectation at their little 'pub.'"

2. *Appeal of Cotton Spinners*, 1819.

local bar, numbering seven, was briefed against them.[1] For the next five years not one man in the whole town paid one penny to a trade union.[2] Precarious, however, as was the existence of the early spinners' trade unions, the principle of combination was at times extended widely. An amalgamation was established in 1810 and its strength was by no means contemptible. It reached to nearly all the districts about Manchester, on the east to Staley Bridge, Ashton-under-Lyne, Hyde and their neighbourhoods, on the north to Oldham, Bolton and Preston, and southward to Stockport and Macclesfield, and it was capable of raising as much as £1,000 to £1,500 per week. The business affairs of this organisation were conducted by 40 or 50 people—some of whom were district delegates, while others represented mills—who sat at Manchester[3] under the leadership of one Joseph Shipley. The association exerted no trifling authority over its members. By one of its private rules no shop was permitted to strike without the sanction of the Manchester Congress. But in the very year of its formation it was broken up by the great "Staley Bridge" strike, which threw 30,000 hands out of employment and cost the union £17,000.[4]

After 1799 and prior to 1824 trade unions were driven further into the obscurity to which the frequent prosecution of their members had urged them, by the drastic measure of the former year, confirmed and amended in 1800. At one time the law was ruthlessly enforced, and sometimes when the operatives seemed to be on the verge of important successes. Instances abound in the pages of

1. *Appeal of Cotton Spinners*, 1819; *Gorgon*, 1819, January 9th, pp. 271—2, and February 6th, p. 304.
2. *Quinquarticular System*, pp. 2 and 4.
3. No doubt on Sundays, as did the governing body of the Spinners' Amalgamation of the "forties."
4. Reports, etc., 1824, v. 573—4 (evidence of Frost, an official), and 604—8 (list of mills contributing); *Character, objects and effects of Trade Unions*, 13—16; *Quinquarticular System*, 1 and 2.

evidence submitted to the committees on combinations of 1824, 1825 and 1838; in fact disputes then culminated almost inevitably in prosecutions and the sentence of some unfortunate operatives to months or years of imprisonment. Masters and men were deadlocked in misunderstanding of their relations to each other, and while the latter were prone to resort in desperation to force, the former inclined to treat all trade unionists as felons whether they gave way to violence or not. Francis Place was not exaggerating, though his regard was one-sided, when he declared that the operatives in this period "were drawn into combinations, betrayed, prosecuted, convicted, sentenced, and monstrously severe punishments inflicted on them."[1] The judgments were felt to be especially unfair in view of the fact that the operatives had been dissuaded from looking to the Government for aid and led to believe that they must get what they wanted for themselves. It was assumed, of course, that peaceable means only would be employed, but some kind of agreement or association among workpeople was plainly implied. The operatives also smarted under a sense of injustice because, although the masters were also combined in numerous instances, not a single one of them had ever been punished.[2] After the repeal of the Combination Laws attempts were made occasionally to impose regulations, or to force the operatives into contracts, under which strikes were rendered again illegal.[3] At one mill in Manchester, for example,

1. Place MSS., 27,798—11 (quoted from Webb's *History*, p. 78). On this question see also evidence to the Committees of 1824 and 1825.

2. Resolution 5 of the Committee on Combinations of 1824 (v. p. 590).

3. Prosecutions of operatives for "molesting" and "obstructing" took place frequently after the repeal of the Combination laws. The constant prosecutions during the Chartist agitations led to a meeting of delegates of spinners' unions on 28th December, 1845, to propose "that the Manchester Committee make arrangements as early as possible with Mr. Roberts as to engaging him as legal adviser for the Spinners' Association." (Webb MSS. Textiles i. 2.) This was W. P. Roberts, a Solicitor, cousin to the then Lord Chief Justice, Sir Nicholas Tyndal. He was a well-known Chartist, and had been appointed legal adviser to the miners at a salary of £1,000 a year; hence his popular title, "the Miners' Attorney General." (See Webb's *History*, note to p. 164, and Gammage's *History of Chartism*.)

in 1844, a regulation was placarded that at no time were more than two operatives in one room to quit work at once;[1] and the practice of engaging men for stated periods longer than a week was sometimes adopted by the masters, and, of course, resisted by the men, since it prevented strikes on short notice.[2] "The presentation of the document," by which operatives were to engage not to contribute to any trade union, was common, and also the "victimising" of obnoxious hands by the use of the "black list." "Victimising," however, was not a practice peculiar to the masters. When the unions were excited after the repeal of the combination laws, and, according to Senior, thought "that they had extorted from the Legislature an admission that their masters must always be their rivals and had hitherto been their oppressors,"[3] the weavers of Glasgow on the 18th August, 1824, decided "that the whole energies of the association be at present confined to the great point, namely, that of thrusting Mr. P. Hutchieson out of the trade: and the funds be increased to support that measure."[4] Hume protested in vain;[5] but the only immediate result of the boycott was the imprisonment of two weavers for a month after a prosecution under section 6 of the Act of 1824.[6] Hutchieson himself had pleaded that they should not be severely dealt with.

The turbulence of the trade unions at the beginning of the nineteenth century has called forth repeated condemnation. But the trade unions fell in turbulent times. Social disturbances continually occurred, and there

1. Engels' *Condition of the Working Class in England in 1844*, p. 179; *Manchester Guardian*, Oct. 30th, 1844, p. 4.
2. Bolton Spinners' Minute Book, 15th July, 1844 (Webb MSS. Textiles, ii. 2). The Miners had the same difficulty to contend with (Webb's *History*, p. 164).
3. MS. report to Lord Melbourne, 1831. Quoted from Webb's *History*, p. 93.
4. Place MSS. 27801—248. (Webb MSS., Textiles, iv. 4.) There had been a boycott in 1787 (Place MSS. above).
5. Pamphlet on combination and arbitration laws, dated 1824, containing a copy of Hume's letter to the chairman of the Glasgow Weavers.
6. Place MSS. above.

is no reason to suppose that the trade unionists were much, if at all, worse than their fellows usually. They, too, as those engaging in political agitations, could plead extenuating circumstances. The political reformers were in a state bordering upon insurrection against the Government, and the trade unionists were for many years in a state bordering upon insurrection against masters who seemed to them to be exercising a tyrannical power, and against a new economic system which excited in many passionate resentment. For some years the irreconcileable notions of the conflicting parties in disputes, as to the remuneration of factory workers and their governance, brought about repeated breaches of the peace. The smashing of machinery, the destruction of mills and other property, and the assaulting of "blacklegs," occurred with alarming frequency until the nineteenth century was far advanced. Conflicts with the constables and the military were not uncommon, and in the collisions that took place deaths were caused and severe wounds were inflicted. The Middleton fights in 1812, the burning of Westhoughton factory in the same year, the assault on a factory during the Manchester spinners' strike in 1812, the resumption of organised machine-wrecking in 1826 and the "plug" riots of 1842, when factories were entered forcibly and the plugs were withdrawn from the boilers to enforce a cessation of work, may be cited as instances of what took place when the strike was viewed almost as a campaign in a social war. Riots had broken out during strikes under the old régime, and it was not unusual for the strikers then to possess themselves forcibly of the weavers' revels[1] throughout the district affected by the dispute. In the disagreements of earlier years, nevertheless, the resort to physical force appears to have been less deliberate

1. Revels are instruments for inserting new work in the looms.

and in a less degree the consequence of hatred of the "masters" than it became when the resistance offered was directed against factory-masters. But while the trade-unionists of the early factory days were neither better nor worse as a rule than those of their fellows who were smarting also under a sense of injustice and oppression, it must be admitted that at certain times and places trade unionism during the industrial revolution was characterised by a spirit of cold-blooded brutality. At Glasgow and Manchester in the early "twenties," and in the former place in 1837, terrorism was exercised against masters and "blacklegs" by an organised system of shooting, vitriol-throwing, and arson.[1] When employers and employed had attained to a fuller understanding of their relations to each other in the new industrial order, feelings of antagonism diminished and violence became less common.

From the evidence given to the three famous committees on combinations of 1824, 1825, and 1838 it seems certain that trades were honeycombed with secret societies prior

1. Houldsworth's evidence to the Committee of 1824; *Statement of Proprietors of Cotton Mills in Glasgow*, 1825; Report of the Committee on Combinations of 1825, and evidence; evidence to the Committee on Combinations of 1838, especially Sir Archibald Alison's and appendices to the first report; Sir Archibald Alison's *Autobiography*, chap. 9; *Edinburgh Review*, April, 1838; *Blackwood's Magazine*, March, 1838; accounts of the trial of Hunter and others at Glasgow in 1838 by Swinton and Marshall. Hume wrote to the Manchester spinners in Jan., 1825, to say that if the outrages did not cease the Combination laws would be reimposed (Place MSS. 27, 801—259, quoted from Webb MSS.). The Oath by which the Glasgow Spinners bound themselves was certainly not such as to encourage a feeling of security among the masters. It read:—

"I, A. B., do voluntarily swear in the awful presence of Almighty God, and before "these witnesses, that I will execute with zeal and alacrity, as far as in me lies, every task "or injunction which the majority of my brethren shall impose upon me, in furtherance "of our common welfare; as the chastisement of knobs, the assassination of oppressive "and tyrannical masters, or demolitions of the shops that shall be incorrigible . . . . "

This was the kind of warning used at Glasgow:—

"We have given long enough time to gether money to pay your expenses back again "to..... ...; therefore, we hope, that you will leave the wheels that you are on "at present to men that have a better right to them than you, on Monday first, and if you "do not atten to this, will sarve you like.....

This we swear by the living God,
Signed by the Captain of the Blood-red Knights."

Here followed sketches of a skull and cross-bones, a coffin, crossed pistols, and a hand gripping a dagger thrust through a bleeding heart (Reports, etc., 1824, v. p. 479). McDougall and Smith did not think that spinners could have drawn these pictures (p. 615). "Blackleg" weavers were first treated to the "Black Cat," which was a brick tied to a string. The brick was thrown through the window over the warp, and then pulled away so as to destroy the threads (see Webb MSS. Textiles, iv. 4). If this failed to subdue the weaver in question, vitriol might be used against him. There is little doubt that Thomas Ashton was murdered in 1831 on the instructions of trade-union officials. (Jevons' account of the Ashton strike for the Social Science Association, 1860.)

to 1824; the burst of activity, therefore, which followed on the declaration of the Government that the operatives might combine as they wished was in some degree an appearance only. Nevertheless it is unquestionable that the disposition to combine was greatly enhanced—contrary to the expectations of Francis Place, and perhaps of the Philosophical Radicals as a whole [1]—by the removal of the Combination Laws, the publicity which the investigations of Committees gave to trade unionism, and by the triumph which was naturally felt by the operatives in the success of the efforts put forth to secure the repeal. In Manchester and the surrounding districts in 1824 a huge weavers' combination was publicly formed, a combination from which the muslin workers split in 1825 after a quarrel as to finances,[2] and in the former year the weavers of Scotland also furnished themselves with a constitution.[3] These two associations, however, marked a last spasmodic effort on the part of a class of labour rapidly losing influence, an effort which culminated in desperation, rioting, and machine-wrecking. The spinners, on the other hand, were daily gathering strength; and there were even those who declared that the prosperity of the industry was menaced by their excess of power in that it tended to discourage the influx of capital. For the next twenty or thirty years, in fact until the domestic system was forgotten and a new class of workers, engaged in power-loom weaving and the operations subsidiary to it, had been gradually created by the processes of industrial

1, Place MSS. 27798—57 (quoted from Webb's *History*, p. 98).

2. Rules in the Manchester Library: hand-bill preserved in Place MSS. 27803—255 (quoted from Webb's *History*, p. 98. *Manchester Guardian*, April 17th, 1825.

3. Rules printed in Reports, etc., 1825, iv. 550—2. Many weavers were still small masters and they were members of the societies, as well as journeymen. In the case of one society, the Quilting Weavers of Manchester, journeymen on strike were to have 5/- a week, and employers 1/6 a week for each loom kept idle (rule 7). Any member with looms idle was to have 1/6 a week for each loom for six weeks, then 9d. for six weeks (rule 8). The rules of the Manchester Smallware Weavers of 1756 term the master weaver employing journeymen an "undertaker": he was included in the Society. These combinations were really directed against the merchants, both the large ones and those like the local "fustian masters."

selection, and had organised, the trade union movement in the cotton industry remained in the hands of the spinners.[1] The first power-loom weavers, as we have observed before, proceeded from many sources, and did not, therefore, at first constitute a "class."

In the early "twenties" the Glasgow spinners occupied the most prominent position. They were so exhaustively combined and daringly led, that an exceptionally strong association of masters proved barely capable of suppressing their extravagant exactions and the outrages of which they were guilty.[2] In Lancashire from 1810 to 1829 numerous local strikes were set on foot, but no traces of a combination of any importance can be found. Before the latter date, however, the spinners of one district freely helped those of another. When hands turned out, delegates scoured the country begging for funds[3]—a proceeding to some extent rendered necessary by the Act 39 George III., c. 81, which forbade their accumulation. No doubt the begging became a nuisance, and the feeling must have spread abroad that some districts were exploiting others to fight their battles. Such a state of affairs could not continue without protests being made after the inequality of the support accorded to different places, which was at times considerable, had attracted general attention. "Such was the support given to the Stockport spinners, that while the spinners in Manchester, who were turned out at the same time, were receiving only 2s. a week, the Stockport men were receiving 7s. a week," we read in *The United Trades Co-operative Journal* for March 13th, 1830.

1. By 1839, in Scotland, Friendly Societies were almost entirely given up by the weavers owing to poverty. Only burial clubs remained. (Reports, etc., 1839, xlii. p. 537.)

2. Much evidence to the committees on Combinations of 1824, 1825, and 1838: *Case of the Glasgow Masters, the operative response and a reply.*

3. See for instance Reports, etc., 1838, viii. 3814—5. In the *Manchester Guardian* for March 7th, 1823, a notice appears to the effect that a Bolton spinner had been fined 50/- for collecting money in Blackburn to support a turn-out in Bolton. The west country of Scotland contributed as much as £900 to "the last Glasgow strike," it was asserted at the Ramsey Congress (Report, 29). In the dispute of 1837 the Manchester Association contributed £200 or £300 to Glasgow (Reports, etc., 1837—8, viii. Q. 3815).

Consequently careful financial arrangements were made by the new amalgamation, which had been forced into existence by the Manchester Society's feeling of weakness after its failure in the strike of 1829. A congress of spinners of the British Isles had been summoned at Ramsey, and the federation there formed met again at Manchester in 1830.[1] A weekly subscription of one penny per member and an allowance of 10s. weekly as strike pay were determined upon. When more strikes were desired than the funds could support, districts were to ballot for the privilege of striking. As regards partial strikes, each district was to support its own until the cost per member rose above 1s. extra per week; then it might appeal to other districts, but it was not allowed to draw upon the funds of the amalgamation. In fact, it was regarded as the function of the district to keep individual employers up to the district level, and that of the amalgamation to prevent district reductions and bring districts into line.

The federation of 1829 was a real federation. Only unions could join, and each union was a recognised unit with distinct powers and funds.[2] The usual difficulties were met with in the government of the association; the small Manchester council, checked by half-yearly meetings of delegates, did not prove altogether satisfactory.[3] It naturally gave rise to jealousy; but at that time the executive could not have been made representative, so inadequate were the means of communication and transport

1. The leading spirit was Doherty, Secretary of the Manchester spinners, though M'Gowan and Foster did much to make this federation a success. Doherty also founded the National Society for the Protection of Labour. Francis Place says that he was "a very "extraordinary man, a cotton spinner at Manchester, a rigid, uncompromising, intolerant, "Irish Catholic, altogether a wrong-headed, singularly obstinate, persevering man." (Quoted from Webb MSS., Textiles, i. 5.) A short account of him appears in Webb's *History*, 104—5 *note*.

2. See Report of the Ramsey Congress, Resolutions 8, 9, 10, 15.

3. Nor had the three national committees, decided upon at Ramsey, been satisfactory apparently, otherwise they would not have been given up. The Congress had hesitated between three committees and one.

then existing and so great their costs. The last we hear of this Spinners' federation is from the *Poor Man's Advocate* of June 23rd, 1832. "Almost every spinning district," it writes, "of any consequence was enrolled in the Union. The power of the union of course increased with its members, and a number of the worst paying employers were compelled to advance the rates of spinners to something like the standard rate. The union, however, which Mr. McGowan[1] had mainly contributed to mature, has since, from distrust or weariness, sunk into comparative insignificance." It had naturally paled before the rising star, the National Association for the Protection of Labour, founded in July, 1830.[2] The Manchester Society's sense of helplessness after the failure of the strike of 1829 had contributed in no trivial degree to the foundation of the Spinners' Amalgamation, and the Society for the Protection of Labour,[3] which was a federation of some 150 distinct clubs, was established because of the growing conviction in the minds of its promoters, that ordinary trade federations were not powerful enough to achieve much. To this "trades' union" each society paid an entrance fee of

1. Doherty was the real leader, but he probably wrote this notice as it appeared in his paper.

2. On the early history of this association see Doherty's letter of May, 1829, to the Liverpool sailmakers. (Webb's *History*, p. 106.)

3. From the Appendix to *Combinations of Trades* we learn that the following societies connected with the cotton industry were among the members of the Association for the Protection of Labour:—

Spinners.—Ashton, Chorley, Rochdale, Mosley, Staley-Bridge, Manchester, Leigh, Oldham, Clitheroe, Hyde, Stockport, Shepley, Preston, and Rossendale.
Weavers.—Manchester, fustian.
,, power-loom fustian.
,, cotton and worsted small-ware.
,, power-loom cotton.
Clitheroe, ,, ,,
Ashton, power-loom.
Staleybridge, power-loom.
Dukinfield, ,,
Macclesfield, small-ware.
Derby, tape.
Blackrod, nankeen.
Power-Loom Overlookers.—Staleybridge and Dukinfield.
Card Grinders and Strippers.—Manchester, Ashton, and Clitheroe.
Cotton Yarn Dressers.—Manchester, Ashton, Clitheroe, Staleybridge, and Dukinfield.
Spindle and Fly Makers.—Manchester and Preston.
Sizers.—Manchester.
Stretchers.—Manchester.
The receipts for the first nine months of its existence amounted to £1,866.

£1 and 1s. per member, and a weekly subscription of one penny per head of its membership. Its general meetings were held at Manchester, Nottingham or Derby.[1]

While the National Society for the Protection of Labour was the first general trades' union which met with any measure of success, it was not the first combination founded on the basis of different trades. The idea of a general trades' union, indeed, was twelve years old at least, but previously circumstances had not been such as to assist its realisation,[2] although in 1826, when extravagant schemes were mooted under the excitement caused by the legalising of combination in 1824 and the confirmation of the measure in 1825, "a Trades' Union was formed in Manchester, which extended slightly to some of the surrounding districts, and embraced several shades in each," and then "expired before it was so much as known to a large majority of the operatives in the neighbourhood."[3] Probably this was the general union, referred to at the Ramsey Congress, which allowed its members to strike without specific authority against reductions in wages.[4] If so its failure to attain a position of any importance is comprehensible.

The National Society for the Protection of Labour assisted the cotton spinners in the Ashton strike in the winter of 1830-1, but by the refusal of the Lancashire branches to support the great Nottingham strike the defection of the Nottingham members was brought about. The Association, nevertheless, flourished and expanded, and showed great activity for another year at least;[5] the alarm which it excited, however, proved groundless, for

1. Reports, etc., 1838, viii. Q. 3451.
2. Webb's *History*, pp. 106 and 107, *note* 3.
3. *Herald of the Rights of Industry*, April 5th, 1834. Webb's *History of Trade Unionism*, 106 and 107, *note* 3.
4. Report, 23.
5. Webb's *History*, 106—10, where many interesting details are given. The Society was said to have had at one time as many as 100,000 members.

early in 1832 it collapsed altogether. One attempt to revive it, under the new name of "The General Social Compact for the Protection of Labour,"[1] was made by the Manchester Committee, which had quarrelled with Doherty, and another attempt was made by Doherty himself.[2] But neither of these schemes came to anything, and, very shortly after, the first general union of any magnitude and endurance was altogether a thing of the past. "Out of its ruins," we are told, "sprung the present trades unions, still more extensive and powerful"[3]—no doubt the Builders' Union, the Potters' Union, and Owen's Grand National were meant.[4] The last signs of vigour in this period among the cotton operatives were exhibited at Oldham in 1834, and again in 1837 (when, according to William Marcroft, the union was broken up) at Bolton and Preston in 1836,[5] and at Glasgow in 1837. At the last-named place many atrocities were perpetrated under the direction of a secret committee. How strong the Glasgow union was may be gathered from the fact that the weekly contributions were about 2s. 6d., sometimes 5s., and that membership of the union was offered to new hands, who flocked to the town because of the higher wages there, for an entrance fee of £5 and subscriptions of 5s. a fortnight, in addition to the regular union instalments.[6] Whether membership was ever accepted by new hands on these prohibitive terms is not stated. Compare this with the modest 7d. a week of the Manchester Spinners' Union at the same time,[7] and the entrance fee of ten shillings and weekly levies of from threepence to sixpence in the

1. *Union Pilot and Co-operative Intelligencer*, March 10th, 1832.
2. Webb's *History*, 110, also Doherty's paper *The Poor Man's Advocate*. For an account of the newspapers of this movement see bibliography.
3. *Herald of the Rights of Industry*, May 5th, 1834.
4. For an account of these unions see Webb's *History*, pp. 110—33.
5. Ashworth's *Preston Strike of 1836-7*.
6. Reports, etc., 1837—8, viii. p. 306.
7. Reports, etc., 1837—8, viii. Q. 3769. This Society had 1,060 members out of a possible 1400 or 1500 (Reports, etc., 1837—8, viii. Q. 3784—5).

Manchester Society, whose rules were printed in 1795; also with the customary eighteenpence to branch and amalgamation together at the present time.

Masters' associations played no insignificant part in bringing about the collapse of trade unions. Masters' associations had existed in some form from the earliest times; in fact, it is a matter of doubt whether alliances originated with masters or men. In the check-makers' dispute of 1758 the masters appear to have been combined as well as the men;[1] and in 1745 the Manchester masters, by general agreement seemingly, had forced a reduction upon their weavers, because the Young Pretender's Highlanders "took a large sum of money out of the town."[2] Adam Smith's shrewd guess, that in every trade "the masters are always, and everywhere, in a sort of tacit, but constant and uniform combination, not to raise wages above their actual rate," was probably not remote from the truth. Combinations against the operatives were asisted by meetings for trade objects, and by such institutions as Chambers of Commerce. The "Commercial Society," which ultimately became the Manchester Chamber of Commerce, was established in 1794 and its influence was very considerable.

The first combinations were no doubt informal and evanescent; the creation of formal employers' associations was compelled by the elaboration and spread of trade unions. Before 1787 the master manufacturers or merchants at Glasgow were united in an association, which was revived and strengthened about 1812 when the weavers, having collected large funds, forced the magistrates to fix rates. The earliest association of master spinners, I believe, is that which conducted the Manchester

1. *Letters on the dispute between the Check-makers and their Weavers*, 1759.
2. Resolution of Weavers in 1758.

strike of 1818, and is said to have existed some years earlier.[1] One of the strongest of the early masters' associations was that at Glasgow, founded in 1823, and still existing in 1837. It had no written rules, no fixed times or places of meeting and no regular subscriptions, but it imposed levies on each master proportional to the number of spindles in his mill, and employed a secretary.[2] Numerous other associations, formal and informal, existed, for instance at Ashton, Bolton, Oldham and Preston;[3] but they did not flourish in any conspicuous degree because custom was breaking down, competition was increasing, and businesses were, therefore, acquiring more individuality. When employers took concerted action the feeling soon arose in some that they were being used as tools by others who would reap all the gains. It was not until the similarities in conditions in one place became pronounced in the second half of the last century that masters' combinations began to be continuously effective. Early in the century, moreover, great differences existed in wages, and an average employer could not be expected to co-operate cordially with his keenest rivals, especially with those who managed to undersell him by getting their labour exceptionally cheap. It is not, therefore, astonishing that in the report of the Committee on Artisans and Machinery in 1824 no strong masters' combinations are mentioned, except that of the ten London type-founders, and the Glasgow Spinners' Association. So great were mutual suspicions that when the Manchester fine spinners com-

1. *Gorgon*, Sept. 12th (p. 136) and Sept. 26th (pp. 151—2), 1818; *Appeal of Cotton Spinners*, Dec. 24th, 1818.

2. Evidence of Houldsworth, Dunlop, McDougal and Smith, to the Committee of 1824, and of the first, Allison and Todd to the Committee of 1837; also *Statement of the Case of the Glasgow Master Cotton Spinners*, 1825, Evidence of Campbell to the Committee of 1825.

3. Cobbett's *Weekly Register*, 30th Aug., 1823, Manchester Guardian, Feb. 22, 1823 (both quoted from Webb MSS., Textiles i. 5, and ii. 2); account of the Ashton Strike for the Social Science Association, 1860; Andrew's *Annals of Oldham*.

bined in 1830 they chose for their chairman a gentleman of another trade.[1] Some employers had proceeded to such lengths as to use the trade unions to crush their competitors, as Senior pointed out when reporting on combinations to the Government in 1830. We are even told by Tufnell of employers who subscribed to the funds of workmen's combinations in order to support strikes against rivals, and who, moreover, with the object of conciliating the trade unions and acquiring some control over them, would welcome the men's leaders in their factories and supply them with the casual work which their other duties enabled them to perform.[2]

These sources of weakness notwithstanding, masters' associations proved themselves antagonists of no mean strength at Manchester in 1818, and on several occasions between 1824 and 1837, when they were frightened into sinking their differences and exerting themselves jointly by the extraordinary expansion of trade unions, their abundant strength, their outrageous demands in many instances, and here and there by deliberate acts of violence.[3] Determined efforts were made to resist a trade-union movement daily growing more aggressive and formidable; with the result that a victory at Manchester in 1829 was followed by one at Ashton in 1830, when 52 factories of that town, and of Dukinfield, Stalybridge and Mossley had been stopped, and 18,000 hands were rendered idle. The latter victory was won against the National Society for the Protection of Labour. Employers were successful again at Preston in 1837; and, finally, to crown their efforts, they completely destroyed unionism at

1. *Character, Objects and Effects of Trade Unions*, 1834, p. 101. As to the weakness of the early Employers' Associations, see also *On Combinations of Trades*, 1831, pp. 20–5.
2. *Character, Objects and Effects of Trade Unions*, p. 100; *On Combinations of Trades*, p. 45. For an account of Senior's Report see Webb's *History*, pp. 124—6, and *note*.
3. For the atrocities committed by the early Trade Unions, chiefly by the Glasgow Spinners, see evidence to the Committees on Combinations of 1824, 1825, and 1838.

Glasgow in the same year. When the crises were over, however, employers' associations tended to revert to their old position, or to drop out of existence altogether, although some kind of loose organisation had to be maintained to counteract the pressure brought to bear upon the Government by the trade unions for a legal limitation of the hours of labour.

The temporary power of the early employers' associations is to be attributed not merely to the natural suppression of private feuds by the general dread of a common enemy, but also to a device by which their cohesion was artificially maintained during periods of stress. This device consisted in each member binding himself to pay a heavy penalty if he acted in opposition to the general will—an expedient of doubtful legality which was never put to the proof, though at Preston, as late as 1853, a master was intimidated by a threat of proceedings in a Court of Law to exact the fine. The device of the penalty was employed by the master cotton spinners before 1818, and it appears to have been introduced many years earlier. Adam Smith referred to it: "When masters combine together in order to reduce the wages of their workmen," said he, "they commonly enter into a private bond or agreement, not to give more than a certain wage under a certain penalty."[1] In the cotton industry the device was quite common after 1818, and in the Preston strike of 1853 it was fixed at no less a sum than £5,000.[2]

1. *Wealth of Nations*, Bk. I. Ch. 10.

2. In the strike of 1829, M'Williams said, one master had suggested terms to his men, and the men decided to accept them. Then they waited upon the master, who said, however, "Men, I am extremely sorry that I cannot stand to the engagement to the "proposition which I have made." "We were very much alarmed at that," Mr. Williams continued, and I said, '"Why, Mr. Green, how does that occur?" He said, "I have been "to the Masters' Association to-day, and I must tell you that we were bound together by "a bond of £500 if any one master should deviate from the first lists proposed." "Why," I said, "I would not mind that." "But," he said, "they have further told me that if I "consent to give this list they will throw their goods into the same market which I go into "with my yarns at a price which will utterly ruin me."' (Reports, etc., 1838, viii. Q. 3655.) See also the *Gorgon*, Sep. 12th, 1818, p, 136, and the account of the Preston strike for the Social Science Association.

Beyond question the years about 1830 were great with prophetic events in the industrial world. They were years when the trade unions were gaining daily in effectiveness. Instead of mobs they became disciplined forces, and their leaders began to employ strategy in directing them. The principle of concentrating the whole force of "the trade" upon one district, to be selected by ballot when other districts also had pressing grievances, was adopted;[1] and sometimes, even, a district would be attacked piecemeal. Nor did the employers, for their part, neglect to use their associations to the greatest advantage. When the hands turned out from one or a few mills they sometimes locked out the whole district, and when the district was "struck" they occasionally succeeded in procuring "lock-outs" in other districts as well. For instance, the Glasgow masters "shut down" the district in 1824 to settle the dispute at Houldsworth's mill.[2] Again, during a dispute at Manchester, the secretary of the Master Fine Spinners' Association called on the coarse spinners to lock out their men on the ground of a previous arrangement,[3] and the coarse spinners thereupon insisted on their men entering into written engagements not to assist the fine spinners, for whom they were contributing at that time about 3s. a week each. This the men stoutly refused to do, and the result was a "turn out" of all the coarse spinners.[4] The policy of locking out men who were not involved in a dispute,[5] with a view to coercing those who were, which

1. Report of Ramsey Congress, resolutions 9 and 10, and debate, pp. 23—5; resolutions 4 and 5 passed at Manchester in December, 1830 (Appendix II. to *On Combinations of Trades*).
2. *Statement of Proprietors of Cotton Works in Glasgow, etc., case of the Operatives, etc.*, 1825.
3. *United Trades Co-operative Journal*, 1830, April 24th.
4. Reports, etc., 1838, viii. Q. 3,632 and 3,776. For another example see Butterworth's *History of Oldham*, 215—6. The "presentation of the document" was common.
5. Later, when the policy was especially prevalent, about "the middle sixties," the United Kingdom Alliance of Organised Trades was formed to deal with it. This Association was not a great success: beginning in January, 1867, with 53 trades and a membership of 59,750, which increased to 68 trades and 61,203 members shortly afterwards, it found itself with but 23,580 members, belonging to 47 trades, by the September of the same year; and in 1870 it died out entirely. (Webb's *History*, pp. 241—2; also rules in the Webb Collection in the British Library of Political Science, London.)

is still practiced, led to the "sympathetic strike." Again, the trade unions soon learnt from bitter experience, of which the fate of the National Society for the Protection of Labour, established as it was to resist reductions, may have formed a part, that it was bad policy to strike in a falling market; and the masters learnt at the same time that by precipitating disputes in times of bad trade they might insure being unhampered when trade improved. Thus the strike and the lock-out became prospective and retrospective. Engels asserted, but whether on good grounds or not cannot be said, that the Chartist strikes of 1842 in Lancashire were brought about by the masters in the first instance to avoid troubles when the bad times were over.[1]

Factory organisation was bound to break up the conceptions of another age and create its own. After the industrial revolution had really taken place no sane man could shut his eyes to the fact that the position of the operatives had undergone a fundamental change. The inapplicability of old theories needed no demonstration. Neither in the minds of the operatives, after they had fought two or three battles with the new capitalists, nor in the minds of those who watched the conflicts, could much doubt remain that industrial arrangements had been recast in a new mould. Mills were assuming larger proportions and a new class of men was beginning to direct them—men unaffected by the ancient customs of the industry who regarded their hands much as servants—and, moreover, a new generation of operatives, born into the factory system, was growing up. Old notions bred in the cottage, and ruling when the gin-horse tramped the yard, were unmistakably out of date. Hence we find the cotton operatives corporately accepting a new order of

1. *Condition of the Working Classes in England in 1844*, pp. 231—2.

things. Their statement of aims drawn up at the congress at Manchester in 1830 definitely recognised the employers' increased functions.[1] Still the old spirit was not entirely eradicated until long after 1830. The control of the master grew but slowly. The spinners in the jenny mills were very independent at the beginning of the nineteenth century, "far more independent than they have ever been since," Robert Owen wrote in his Autobiography.[2] Ure, referring to early days, declared that it was impossible to keep the spinners at regular work. "Frequently," said he, probably with exaggeration, for Ure was a somewhat indiscriminating admirer of the new industrial order and impatient of all criticisms of it and any resistance to it, "they spent two or three days per week in idleness and drinking, and made the children who worked under them wait for them in the ale-houses until they decided to go to their work. When they went to it, they would often work quite desperately, day and night, in order to pay off their public-house score and to earn more money for 'sprees.'"[3] "Labour" newspapers habitually denounced the "cotton lords" who had made of free workmen "slaves of the bell." The first factory hands were intolerant of discipline and resented regular hours. In the men's opinion it was not they who were infringing the rights of the masters, but the masters who were infringing their rights in locking them up in "cotton hells" and treating them like "slaves." Miserable as it was, the condition of the hand-loom weaver was

1. It sets it forth "That it is not the intention of this Association, either directly or "indirectly, to interfere with, or in any way injure the rights and property of employers, "or to assume or exercise any control or authority over the management of any mill or "mills; to uphold the just rights and reasonable authority of every master, and compel all "the members of this Association to pay a due obedience and respect to their respective "masters and all their confidential servants in authority under them, our only object "being, to uphold the best interest of our common country, by averting all the horrid "train of direful calamities which have already made much progress amongst us and "which are inseparable from cruel poverty, ignorance, degradation, pauperism and crime, "and to obtain for our families the common comforts and conveniences of life." (Resolution 13, Appendix II. to *On Combinations of Trades.*)

2. p. 31.

3. *Cotton Manufacture*, ii. p. 448, ed. 1861.

widely held as preferable to that of the "power-loom slave," for the former had not, like the latter, "mortgaged his time to the sound of his master's bell."[1] Lancashire spinners had gravely demanded the right to submit three names for each vacancy in the mills[2]—a claim which is not unknown to-day in the industrial world—and Glasgow spinners had "preserved" the work in Glasgow mills like game. Indeed the spinners in Glasgow had acquired extraordinary strength by combination, and dictated to their masters in the haughtiest of terms.[3] A newspaper of the time might well object to the "audacious attempt of the cotton spinners to turn all the mills into a petty democracy, and to gain the complete upper hand of their masters."[4]

A spirit of selfish exclusiveness, fostered by the stress of early competition, partially explains the light in which many women workers in the cotton industry were regarded by the male operatives shortly after the factory system had become usual. Women were among the members of the Manchester Spinners' Society of 1795, yet no women belonged to any of the trade unions in 1829 though numbers of women were engaged in spinning. By resolution 24, adopted at the Ramsey Congress, they were

1. *Manual Labour v. Brass and Iron.*

2. *Character, Object and Effect of Trade Unions*, p. 16. The object of the demand was partly, no doubt, to protect the associated spinners against free labour, and to assist them in making their organisation more exhaustive.

3. *Statement of Proprietors of Cotton Mills in Glasgow*, 1825; also much evidence to the Committees of 1824, 1825, and 1838, *e.g.*, Reports, etc., 1824, v. pp. 476—7. Here for instance is the demand made by Houldsworth's spinners:—

"We unanimously agree that we are defrauded in our sizes; we wish the quadrant "and reel to be adjusted; we wish seven cops to be rasped; the four top rasps to be taken "off, and the seven next for the quadrant as it was formerly, we wish all the fines to be "entirely done away with. We entreat you to take these two men back to their wheels, "as you see no other man will take them, and we hope it will prove better for you and us "both. We have too many masters; therefore we insist on you to give the power to one "man, and we will abide by him if reasonable. We consider that Mr. Dyson and James "Fisher are too vigilant, by imposing on the general part of the men, therefore we wish "you to give them a reprimand before us. We consider Mr. Russell to be no judge of his "business, therefore we insist on you to turn him off, and get a man who is a judge of his "business. We insist you will make no example on this occasion, as we are all involved "alike, and will stick to each other, if done. Lastly, we insist that you will admit no "indifferent characters to work among us, and that John M'Kenzie Phillips may not be "admitted with us in future. Anderson, 7th April, 1823."

Other instances of the men's demand that foremen and other hands should be dismissed are given in *Statement of the Proprietors of Cotton Mills in Glasgow.*

4. *Case of the Operatives*, Glasgow, 1825.

urged to organise themselves in distinct associations. It is true that we hear of an attempt, which met with limited success, being made by the men in Glasgow, to procure the same rates for women as for men, notwithstanding the masters' protest that the former did not turn out so much work or so good a quality of work as the latter.[1] But this action on the part of the men was taken chiefly in their own interests. Many of the male operatives objected altogether to the employment of women as spinners, and for a time it was checked, if not entirely stopped, in Glasgow, though shortly after the great strike of 1837 as many women were spinning there as men, the former on mules of some 250 spindles only. In Manchester women spinners had worked from the earliest times; women were spinning in Manchester in 1838[2] and some years later they were to be found among the members of the spinners' unions in Lancashire.[3] Those who objected to the employment of women urged that the heat of a spinning-room was particularly dangerous to their health and that the dress which the heat necessitated was indecent.[4] But in reality the antagonism to adult female labour was very largely founded on the male operatives' inability to rid themselves of the fear that women's wages would usually be small (because of the weakness of their resistance to the masters' encroachments, the low level of their standard of life, and the partial support which many of them received from husbands or fathers), and that, therefore, when men and women were employed on the same

1. Reports, etc., 1833, vi. Q. 5410—3; 1838, viii. Q. 1338—50.
2. Reports, etc., 1838, viii. Q. 3529—30.
3. From the trade unions, however, they were expelled about 1870, and ultimately the men became so insistent on their removal as minders from the spinning-room that their retention led on occasion to strikes. (Bolton Reports, 1887.)
4. See Reports of the Bolton Society; also *United Trades Co-operative Journal*, March 6th, 1830. A spinner wrote to this paper complaining that he had been displaced by a woman spinner, who received as wages 12/- to 14/- a week, whereas he had received 25/- to 30/-. The editor thereupon commented that spinning was unhealthy for women, and that their employment was subversive of the natural order of things, according to which the man should support his family.

kind of work the wages of the men would tend to become small also.[1] And undoubtedly there existed, in addition, the simple desire to contract the field from which spinners could be drawn. Others also, besides the spinners, pursued the policy of excluding adult females: the hand-loom weavers of Glasgow would not admit them to their society, in spite of the fact that a great number of women were engaged in hand-loom weaving in Glasgow; and the warpers dicountenanced women warpers—we read of a warper in the sixties having vitriol thrown at him merely for teaching his wife and children to warp.[2]

Another method adopted for relieving the labour market was the encouragement of emigration. *The Gorgon* advocated it,[3] and an employer from Glasgow declared that the spinners there, by devoting a part of their funds to emigration expenses, had reduced their numbers by one-eighth in three years. In 1837 the Glasgow union was still tempting men to leave the country by offering as much as ten pounds to those who did so, on condition that they engaged not to spin again in Glasgow for three years.[4] Shortly after many trade unions seem to have allowed emigration benefit.[5] Such a mode of diminishing the supply of labour could not have had a great effect in proportion to its cost;[6] but it would be a mistake to suppose that the sole object of emigration benefit was invariably to reduce the supply of labour in the home

1. Francis Place in a lecture on Wages (1837) laid it down that when both men and women were employed in the same industry men's wages would come down, and then adds:—"Cotton spinning may however perhaps be considered an exception to this rule. "There it may be said both men and women are employed and yet the wages of a man are "higher than they are in other equally skilled employments, and this is true. It is, how-"ever equally true that the spinners have become alarmed at the consequences likely to "result from the employment of women . . . . . " Quoted from Webb MSS. (Textiles, i. 5.)

2. Appendix C to the Commission of 1867.

3. Nov. 7th and 14th, 1818. The weavers did not take kindly to the suggestion, made as early as 1810 (Reports, etc., 1810—11, ii. 404), that they should be removed to the colonies, though at one time, in 1819, some of them petitioned for a free passage (*Medusa*, June 5th 1819).

4. Reports, etc., 1833, vi. Q. 5234—6, 5243—54; 1838, viii. p. 307.

5. Webb's *History*, p. 184 and *note*. The Bolton Society allowed £2 but no circular to solicit subscriptions (Minute Book, 30th May, 1849).

6. Emigration benefit survives in the rules of some trade unions to-day.

market. In connection with the supply of labour it may be mentioned that Robert Hyde Greg and Henry Ashworth wrote in 1834 and 1835 respectively to Edwin Chadwick, the secretary of the Poor Law Commissioners, suggesting the transference of some portion of the population from the agricultural to the manufacturing districts. As a result a large removal of labourers was effected.[1]

About the end of the first quarter of the nineteenth century a new type of operatives was beginning to dominate working-class thought—men who had been born into a factory system and bred up in it. A similar change was taking place in the ranks of the masters, both spinners and manufacturers. Another fashion in factory management had been set by a new generation born in wealth and by the capitalists attracted to Lancashire. The masters of the very early days excited much envy and some bad feeling, but their intimate relations with the operatives only slowly dissolved. "The manufacturers at this period (1790-1800) were generally plodding men of business, with little knowledge and limited ideas, except in their own immediate circle of occupation. The foreign merchants, or rather the merchants in the foreign trade, were somewhat more advanced."[2] Many of the former had worked with their hands in the factories in their youth. "A factory lord of the present day," wrote the Poor Man's Advocate some thirty years later, "compared with one of the same character half a century ago, exhibits a striking and marked difference. Then the owners of spinning establishments were plain, industrious men, who seemed to belong to this world, and who associated with the workmen for the purpose of courting them to work the

1. Reports, etc., 1843, xlv. pp. 119—70; Reports on removal by Muggeridge and Baker given in the second and third reports of the Poor Law Commissioners.
2. Robert Owen's *Autobiography*, p. 37.

machines, then rude and small, and few in number."[1] The same paper spoke contemptuously of the "polished dandy who has been taught at a great expense, at boarding schools or colleges, that he is not to work for his bread"—"we mean, of course," the writer (probably Doherty) added with rhetorical exaggeration, "the young fry of manufacturers; for the old ones are, for the most part, as rude in manners and ignorant in mind, except in the one great secret of accumulation, as any boor in humble life."[2] The change indicated above was noticeable in Oldham, according to Mr. Andrew, in the years about 1825. By the "forties" the distinct severance of masters from men was common, notwithstanding that so many of the former had sprung directly from the labouring classes.[3] The modern industrial system had fully developed in Lancashire; for, as Dr. Ingram has shortly expressed it, "the whole modern organisation of labour in its advanced forms rests on a fundamental fact which has spontaneously and increasingly developed itself, namely, the definite separation between the functions of the capitalists and the workman, or, in other words, between the direction of industrial operations and their execution in detail."[4] The change when remarked was not lightly regarded either by the men, their leaders, or their sympathisers.[5]

In the years about 1830 factory life was rapidly transforming the views of the operatives. The spinners—or perhaps we ought to say "Doherty"—almost admitted that the masters had the right to use hired labour as they thought fit; but the men carefully guarded against the masters doing so by such contentions as were advanced

1. *Poor Man's Advocate*, May 19, 1832.
2. *Poor Man's Advocate*, Feb. 18th, 1832, p. 34.
3. It was general throughout the country. See Henry Crompton's *Essay on Industrial Organisation*.
4. *Work and the Workman*, by J. K. Ingram, an address to the Trade Union Congress in 1890.
5. There is an interesting, if somewhat violent, series of letters entitled *The Millocrat*, written by Dr. Holland in 1841, in which the new power and its policy are attacked from a Tory standpoint.

during the "long-wheel strikes."[1] The industry from being regarded as the "property" of the operatives seemed at times in danger of being recognised as the "property" of the masters. The latter were not infrequently viewed as "buying" labour in the market at "prices" determined by demand and supply. But what "demand and supply" exactly meant was never seriously asked, and therefore never satisfactorily explained. And, while half admitting that, by purchase, employers had acquired property in labour, Doherty was careful to add that they had not thereby acquired property in the persons of the labourers.[2] He ridiculed the notion of the masters having a right "to do what they liked with their own," meaning their workmen; and jealously curtailed, in the concessions that he made, the limits of their "little brief authority." It needs no demonstration that by a distinction of this kind, if narrowly defined and rigidly adhered to, all real freedom on the part of the masters to re-arrange their factors in production might be destroyed. Yet the distinction is of value, and its emphasis may have been at that time highly desirable, for a growing disposition was apparent to regard labour merely as a commodity. A number of the new masters, it would seem, were excessively autocratic and tyrannical, exacting an unquestioning obedience to every word of command of whatever character, especially in the water-twist mills where resistance was weaker because no tradition existed to give it heart.

The views of the operatives as to the relations between them and the employers explain to some extent the opposition to fines; but the chief cause of this opposition consisted in the scandalous abuses to which the system of fining had led. Some fines, however, it should be observed, were a survival from the time when the weaver

1. See pp. 78—81.
2. *Poor Man's Advocate*, February 18th, 1832, p. 34; *United Trades Co-operative Journal*, August 7th, 1830.

sold his goods for prices varying with their quality. When the Manchester merchants put out warps, they are said to have reserved to themselves " a power of abatement, for deficiency in the spinning or workmanship."[1] Even fines for the enforcement of discipline were not an original invention of the mill-masters, for in a Lancashire wages assessment of May 22nd, 1725, we read that artificers and others had " for every hour's absence to defaulk a penny."[2] Soon after the factory system had become usual fines were made a cloak to hide reductions in wages; they assumed prodigious dimensions, and the hands naturally regarded them as unjustifiable exactions.[3] A truck system,

1. Ogden's *Historical Description of Manchester*, 1783, p. 74.
2. Young's *Annals of Agriculture*. xxv. p. 307
3. See Evidence to the Committee on Payment of Wages (1842, ix.) The following is a list of some of the fines and other payments exacted in Messrs. Latham & Co.'s Mills. It is given in *The Poor Man's Advocate* for March 17th, 1832, p. 67.

Dirty wheels or floor	1/-
Light sets on small wheels	6d.
Light sets on large wheels	1/-
Rubbed cops, *i.e.* the cops made so large as to rub against each other on the spindles	1/- to 2/6
For waste found in the necessary, each spinner	1/-
Risen cops	1/- to 2/6
Broken machinery whether spinner's fault or not	its value
10 minutes late	1/-
Day off without permission	12/-
Gas weekly, six lights, large wheels	2/6
Gas weekly, three lights, small wheels	1/3
Gas weekly, reelers	1/-
Hot water for tea, weekly, large wheels	3d.
Hot water for tea, weekly, small wheels	2d.
Other hands	1d.

In another mill, according to a writer in the *Poor Man's Advocate* (February 4th, 1832, pp. 20 and 21), it was usual for the operatives to give the engineer a penny a week each to send up the steam early to heat the spinning-room. When the master discovered this he deducted the amount from the engineer's wages. The men then ceased to contribute their pennies, but the employer insisted on them continuing to do so. In another mill 4/- a week was deducted for gas. One week it was not used but the deduction was made; the men protested but some had to pay 2/- nevertheless. (*Poor Man's Advocate*, January 28th, 1832, p, 13.) In the "middle thirties" the men petitioned the masters not to fine but to dismiss, and the masters acceded to their request. But the system of fining appeared again. (See Engels' *Conditions of the Working Classes in England in 1844*, pp. 179—181.) The masters' contention is that if payment is made by product deduction must be made for defects in product, and that by fining in general a lot of small losses, due to carelessness, for which it would be ridiculous to discharge hands, but which come to a large sum altogether, are prevented. Mr. Simpson said before the Labour Commission that fines could not be exacted now from the strongly organised spinners, so they accumulated on the weavers. At mills where spinning and weaving are carried on by the same firm we find one set of rules applying to the weavers, but another to the spinners and card-room operatives. In some cases fines for being late are inflicted on the weavers, and they are also subject to fines of a penny, twopence and threepence, for defects in the cloth. Some weavers also have to buy their sweeping-brushes. The cause is not only weaker organisation, but that the weaving industry is less developed than spinning. The "grassing system" is a species of fining. It consists in suspending an operative for some days. The spinners vigorously resisted it, and with success. Unreasonable fines and deductions and arbitrary ones to which the employé has not agreed have been checked by the so-called Truck Act of 1896, but by Order dated March 3rd, 1897, persons engaged in all branches of the Weaving of Cotton in Lancashire, Cheshire, Derbyshire, and the West Riding are exempted from the provisions of this Act. The exemption was granted at the request of the cotton operatives, who disapproved even of the systems which the Act legalised.

that is, the practice of paying wages otherwise than in money, also began to flourish under the stress of early competition, and this likewise met with vehement resistance. Yet "Tommy" shops were extensively carried on by the owners of cotton mills, either openly or under cover of other names, in 1842 and even later; in Chorley in 1842 only one manufactory had no shop attached to it, and in Bury no independent shops existed at all.[1] It should be observed that the cotton operatives have strenuously resisted, not only the ordinary fines and the exaction of penalties from those who do not attain some minimum output, but also the payment of bonuses to the operatives who turn out the most work. They have been induced to do so by a fear of "driving," which is not altogether groundless, and by an almost ineradicable conviction that the less each man works the more will the operatives as a whole receive. The spinners have been successful in their opposition, but the weaker weavers' unions are still struggling to suppress the various methods now employed to persuade hands to aim at a high time-output. One result of success has been that large parts of such rents or quasi-rents as are due to any efficiency of labour above the margin have fallen to employers, since no share in the saving of capital which accrues from an increased time-output can be secured by an operative who is paid merely a piece-rate and not a time piece-rate. Another result has been the loss occasioned through the attainment of a high degree of efficiency being inadequately encouraged.

The consequences of the theory of wages described above were far-reaching. If the remuneration of the operative were to be regarded merely as a payment for labour, which

1. Report of the Committee on Payment of Wages (1842, ix.), Q. 1706—7, 207—9, 688, 2626, 2057, 2252, 2060, 1758; *Vindication of Chorley Spinners*. The existing statutes dealing with "truck" are the Truck Acts of 1831 and 1887. The so-called Truck Act of 1896 deals merely with fines and deductions from wages.

was conceived as a general commodity supplied for different purposes by all working-men, there was no ultimate reason why any combination should not contain all kinds of labour. Hence the National Association for the Protection of Labour, which would have been unthinkable when the operative was demanding his trade privileges, became possible. Its first organ the *United Trades Co-operative Journal*, gave as its object "to arouse them" (the labouring classes) "to a diligent and faithful performance of their duty to themselves by a vigorous and determined resistance to any further encroachments that may be attempted on their only property, their labour, in the shape of reduction of wages"; and its successor, *The Voice of the People*, a sevenpenny stamped weekly paper, reiterated this object, promising at the same time to point out the means by which "their labour, their only property, might be protected."[1] Some spinners were sufficiently under the ascendency of tradition to feel a little doubtful about the general trades-union, but without much persuasion they were induced to follow their hot-headed Irish leader.[2] The trade-union movement was fast becoming a class movement. The idea fostered in all factories, whatever the industry, was that of the employment of "labour" by "capital." Workmen from different industries were grouped in one class, and consequently driven into one combination. In fact, the trade-union movement was being transformed into a "labour" movement; and a labour movement implies that those taking part in it have adopted some social theory as to the relation of "labour" to "capital." No prophet was needed to foretell the future. The alliance might break up—as it did—but something with more cohesion than the alliance, some

1. January 1st, 1831.
2. *United Trades Co-operative Journal*, August 21st, 1830.

amalgamation with the independence of diverse trades less emphasised, and with greater unity, was bound to appear.

This is not the place to explain the views of Robert Owen and his followers, but we must notice the influence which they exerted on the cotton operatives. At first the latter looked askance at co-operation and Doherty was but coldly sympathetic, notwithstanding his declaration in 1830 that a scheme of co-operation had been suggested by him to the spinners eight years before.[1] Some degree of rivalry even sprang up between the Labour Protectionists and the Co-operators, and a debate was held between them at Manchester in the August of 1830.[2] But finally the cotton operatives permitted their trade notions to be thoroughly undermined by Owenism, though their societies did not join the Grand National Trades' Union.[3] The period of excitement closed about 1835, and the Owenites as a serious social party with definite proposals lost their influence in practical affairs. Yet it would be a mistake to suppose that the labour movement came to an end. While the working classes had lost all hope of bringing to their feet the Government, landlords and employers, many of them clung with unwavering devotion to that false economic analysis which represented the operative's labour as the source of all value[4] and therefore fostered a spirit of class antagonism. This belief had to be eradicated before the operatives could make a single step of wise advance in their aims. But it was not removed for many years; and the Protean labour movement therefore continued, now in the guise of Chartism, now in the

1. *United Trades Co-operative Journal*, April, 17th, 1830.
2. *United Trades Co-operative Journal*, August 28th, 1830, pp. 241—244, and September 4th, p. 13.
3. In the August of 1834 the "Grand National," which was to have brought to its feet Government, landlords, and employers, weakened by an unsuccessful strike at Derby and by a turn-out of gas-stokers in London, was formally converted into the "British and Foreign Consolidated Association of Industry, Humanity and Knowledge," having for its aim the establishment of a "New Moral World" by the reconciliation of all classes.
4. Owenite terms survived for years in the records of the cotton operatives' unions.

guise of co-operation. For Chartism was in some respects a legacy left by Owenism. One of the objects of many of those who supported the Charter was to attain something of their old ideals ultimately by first forcing the Government to admit certain reforms relating to its constitution. It was felt that nothing could be achieved while the working classes remained without political power. Instead of bringing the Government to their feet they intended to be the Government. In fact Chartism had three ancestors; Owenite Socialism, the Radicalism which had been active from the beginning of the century, and the reform movement which succeeded in 1832. The constitutional change of 1832 had broken tradition, and paved the way for further change by rendering people sanguine as to the results to be expected from agitations for reform in the structure of Government. Chartism was none the less a legitimate offspring of Owenism, in a large degree, for all its different aspect and apparent character. Deep down it had some of its roots in the question of the distribution of wealth. Much of the effective Chartism was a "bread and butter" movement. In Lancashire, we are told, the Charter was finally embraced with enthusiasm by the cotton operatives' trade unions as a definite policy for achieving a special purpose. They argued that wages would fall again unless an Act of Parliament were passed to prevent them from so doing, and such an Act they thought no Parliament, as it was then constituted, would introduce. Hence the adoption of the Charter as a means of obtaining a more democratic Parliament.[1] Before the cotton operatives finally decided, however, to use their trade unions to force the concession of the Charter by the Government they had been closely associated with the labour movement in its new dress.

1 W. Cooke Taylor, *Tour in Lancashire*, 1842, p. 310.

On September 25th, 1838, a monster Chartist meeting, attended by Feargus O'Connor and the Rev. J. R. Stephens and presided over by John Fielden, was held at Kersal Moor near Manchester.[1] This was followed by torch-light meetings (to avoid the expense of halls) at Bolton, Stockport, Ashton, Hyde, Stalybridge, and Leigh; and by another formidable meeting on Kersal Moor in the middle of 1839. In 1841 a vast and enthusiastic mob assembled at Manchester to greet O'Connor and O'Brien on their release from prison.[2] So far the cotton operatives had played much the same part as the rest of the working classes; but they were to take upon themselves the burden of the movement and fight the battle of reform among the industries of Lancashire. On the 5th of August, 1842, the general strike for the wages of 1840 began at Ashton; and on the 7th, at a meeting on Mottram Moor, the operatives decided not to return to work until the Charter became the law of the land. The next day a large meeting was held near Stalybridge, and those who attended it, after listening to inflammatory speeches, marched round to several factories and turned out the hands. On the following day they cleared the mills in Manchester, and on the 12th of August of the 358 delegates from the factory districts managing the general strike, who were meeting in Manchester, 320 voted in favour of extending the dispute beyond the question of wages and standing out for the Charter. Three days later the delegates met again and called on all workers in the country to support them. Thus the Chartists captured the Lancashire strikes, and "the sacred month," by which was meant an universal strike to enforce the political reform from which so much

1. Gammage, *History of Chartism*, pp. 59 *et seq.* "The sun has seldom shone over a better man than John Fielden," wrote Gammage (p. 63); and he expressed a common opinion.

2. *Ibid.*, p. 197.

was expected, came into operation in the cotton industry. "For a few weeks, indeed, it looked as if the trade union movement, such as it was, would become merged in the political current."[1] Mobs collected every day and marched through the county drawing plugs from boilers, cutting dams and turning out hands.

The unsuccessful strikes of 1842 did not conclude Lancashire's connection with Chartism. The cotton operatives played their part in contributing signatures to the monster petition[2] which was presented on the 10th of April, 1848, and after its "exposure" arming and rioting seem to have been as common in Lancashire as in the other centres of disturbance.[3] But Chartism pure and simple had lost its influence. Manchester became the stronghold of O'Connorism, and O'Connorism was a mixture of social and political movements. A Chartist Conference was summoned at Manchester for New Year's Day, 1851, to consider among other things the establishment of co-operative stores. Thus the Chartists assumed an attitude exactly opposite to that adopted during the strikes of 1842; and Ernest Jones wrote in consequence: "If you think to get the Charter by means of commercial co-operation, you are bad coach-men, for you are putting the cart before the horse."[4] Even before this a section of Chartism had been drifting into a general agitation about everything. For instance, O'Brien had carried by a large majority, at a meeting of the National Regeneration Society, a motion advocating measures relating to land, currency, credit, exchange, and so forth, preliminary to the establishment of the fundamental points of national reform;[5] and O'Connor had put forward

1. Webb's *History of Trade Unions*, p. 158.
2. Gammage's *History of Chartism*, p. 300.
3. *Ibid.*, p. 337 *et passim*.
4. *Ibid.*, pp. 357—8,
5. *Ibid.*, pp. 352—3.

land schemes, which were taken up by the cotton operatives amongst others.[1] Even the trade unions were not unaffected. The Oldham Spinners' Union, according to William Marcroft, rented a large tract of land near Glodwick in order to give employment to the hands who had been thrown out of work through the introduction of self-acting mules, and although the Bolton Society decided as early as the 6th of February, 1845, to insert a disclaimer in the *Manchester Guardian* to the effect that it was "not in any way connected with those who entertain the idea of sending or locating the surplus population on the land," it probably coquetted with such a scheme, for at a committee meeting held on the 16th of August, 1847, it was decided "that the land question be taken into consideration at the next General Meeting."

The strikes of 1842 are said to have been fomented, partially at least, by the Anti-Corn Law League,[2] but there seems to be no sufficient warrant for the statement, although the Chartists and the Anti-Corn Law party certainly competed with each other, very naturally, to secure the allegiance of the operatives,[3] and the Free-Trade movement as well as Chartism acquired a hold on the working classes of Lancashire. In and after 1844 many resolutions by general meetings and committee meetings on the Free-Trade question (referring not only to grain but also to cotton wool) are to be found in the minute-book of the Bolton Society, and memorials were evidently sent at intervals to the Government. In the annual report of the federation for 1845 the committee

1. "Attempts were made to put the factory workers into possession of small plots of land. Hence we had 'Spinners' Gardens' and 'Feargus O'Connor's freeholds,'" writes Mr. Andrew in his *Fifty Years of the Cotton Trade*, p. 4.

2. On this question see Webb's *History of Trade Unions*, p. 158. W. Cooke Taylor in his *Tour in Lancashire* said it was absurd to suppose that the Anti-Corn Law League had anything to do with the strikes (p. 318).

3. Instances will be found in Gammage's *History of Chartism* and Morley's *Life of Cobden*.

thus presented its theory of the matter. It argued that the high price of food always meant a decreased demand for labour, and then continued: "We therefore resolved to act a Christian and prudent part by arousing public opinion in our union upon the question of opening the ports." Many people were inclined to think that the unions were being drawn too much into general politics. Hence the meeting of delegates held on Sunday, January 25th, 1846, declared "that in future the 'Central Committee' shall not be allowed to expend any money on any political subject whatever.'" Again, on June 17th, 1847, a general meeting adopted the following resolution: "That it having come to the knowledge of this meeting that a report is in circulation that the spinners are connecting political and electioneering movements with their proceedings, beg leave to state that such report has no foundation in truth, and further, that we neither have been, or will be, at any expense in printing or posting the town for such purposes, as they are opposed to the principles of our Association."[1] The date of the last decision, observe, was after the repeal of the Corn Laws.

The dominance of political interests was little more than an episode. After 1847 no indication can be discovered of the interference of the unions in general political questions. Motions about the proposed action of the Government with regard to foreign duties on cotton goods, and about Bimetallism, are indeed entered in the records of the operatives' societies after 1880;[2] but the excuse for them,

1. Minute Book of the Bolton Society.

2. For example, the Secretary of the Oldham Province was instructed by the Council Meeting, held on Dec. 4th, 1881, to forward a resolution to Sir Charles Dilke, from which the following is an extract:—"This Council . . . . hereby resolves on behalf of the "operative cotton-spinners, etc., of Oldham and district, to urge upon the Government "the desirability of refusing to sanction any treaty with France which does not concede to "this country a reduction of duties, firmly believing that upon single cotton yarns 25 per "cent reduction is both necessary and reasonable to expect." Again, we are told in the reports of the Bolton Province that some unions refused in 1885 to have the remonetisation of silver advocated officially. Yet in 1891 the United Textile Factory Workers Association passed a resolution approving Bimetallism. Again in 1895 the annual conference instructed the legislative council to do all that it could to assist the Bimetallic League. The annual report for the same year contains articles in favour of Bimetallism and against the Indian import duties. Lancashire, because of its large trade with the East, has been the centre of the bimetallic agitation.

as for resolutions relating to legislative interference with the conduct of factories and the hours of labour, is that they are questions bearing intimately on the prosperity of the cotton industry. Certain political questions are of national interest primarily, and certain political questions are of special interest to particular industries or the class of employés. The former the cotton operatives' unions leave severely alone, but they still deal with such of the latter as concern them.

Chartism, we have already seen, from being purely political in form extended to social schemes of the same general character as those which had controlled working-class sympathies in the preceding period. In fact it seems that when that which had been regarded as a modest programme of practicable reforms proved to be as much without prospects of any tangible success as the larger schemes of Robert Owen, the latter began anew to usurp the first place in popular estimation. The new dress was stripped from the old movement, and the old movement was once again laid bare. But it was less threatening and less confident; at the same time it was wiser and more practical, because less ambitious. The Christian Socialists played their part in assisting and guiding what appeared to be a new form of social effort: to few at that time was it apparent that the advance was in a sense a retreat. Yet, in spite of the fact that old ideals were revived, the "Labour" movement was dying down. Soon it was to give place to an unimpassioned grappling with the complex problem of distribution in each industry apart.

The see-saw of events, to which reference has been made above, was glaringly exhibited at Manchester in 1851, when the Chartist congress actually identified itself with the Co-operative movement. But some years before, the

cotton operatives had been partially reconciled to their old beliefs, if, nevertheless, they nursed the attitude of hesitancy which the failure of Owenism had left behind it. In the Easter of 1845 they had been largely represented at a congress for considering the question of a National Association "to vindicate the right of labour;" and in December, 1845, the Lancashire Cotton Spinners sent a delegate to the adjourned conference at which it was decided to form a National Association for the Employment of Labour side by side with a National Association for the Protection of Labour; but they never actually joined.[1]

The co-operation of this revival was the co-operation of Robert Owen, but with a difference. The great reformer had inspired at least three distinguishable movements, the one aiming directly at complete social reorganisation, the other two seeking to attain the same end by the spread of small attempts in the form of co-operative stores or self-supporting communities respectively. In the revival the revolution that was to come like "a thief in the night," to quote Owen's words, was assumed (if it were considered at all) to be impracticable. All that was new in the second movement was the emphasis laid upon "productive" co-operation, so-called. "Productive" co-operation must be distinguished carefully from "distributive" co-operation, for, while it is true that these terms may be misleading, since the co-operative stores now manufacture much for themselves, particularly through the medium of the wholesale societies, yet there is a fundamental difference between the types of co-operation severally indicated. A society for distributive co-operation begins by organising consumption and ends by becoming an employer in factories, in which no division of profits may

1. Webb's *History*, pp. 171—7 and 206 *note*. This Association continued in nominal existence until 1860, but after 1852 its membership was only a few thousands.

be made among the hands; but productive co-operation leaves the market untouched, and aims merely at obtaining for the operatives a share in the profits of the business for which they work, and in addition some control over the management.

The early stores of the twenties, first established during Robert Owen's absence in America, were founded to make money for the self-employment of labour, and this ideal was always kept before the minds of the members; though, indeed, success frequently ended in the withdrawal of capital by individual members for the purpose of starting private enterprises. The Rochdale pioneers of 1844 also aimed at "the manufacture of such articles as the society may determine upon" and the establishment of "a self-supporting home colony of united interests." The idea of beginning with "productive" co-operation, instead of working back from the organisation of consumption, was put forward prominently by the Christian Socialists. At the time of the Revolution of 1848 co-operative workshops were established in France, and J. M. Ludlow brought the idea to England. The "Society for Promoting Working Men's Associations" was thereupon formed, and active parts were taken by Maurice, Hughes, Kingsley, Neale, and Le Chevalier in spreading its views. The association established many self-governing workshops, all of which failed. In 1850 a campaign was opened in Lancashire and Yorkshire, and co-operative weaving and spinning were started at Oldham, Padiham, Rochdale and elsewhere. Some enthusiasm, a remnant of the spirit of Owenism, fanned into a flame by the Christian Socialists, attended the formation of these undertakings; but in a few years most of those which succeeded drifted away from the co-operative ideal, partly through the frailties of their supporters and partly because the system

was not particularly suitable for the industries of weaving and spinning. At first the co-operative factory was as a rule owned and governed by those working in it, though sometimes the share list was open from the first to the whole town. Soon, however, the democratic factories, especially the spinning businesses, tended to become joint stock companies, in which most of the operatives employed might possess no shares; while sometimes the weaving businesses split up into small private firms.[1] As late at 1868, nevertheless, the Oldham union in the preamble to its rules remarked: "One of the most hopeful signs of the times is the development of the principle of co-operation, which is making its way into practice. All the old political parties appear to be breaking up. Progress halts for a principle and a faith, and the country seems forced to acknowledge that there is a truth in co-operation, not inimical, but beneficial to humanity." The Oldham union was no doubt fascinated by the success of the Sun Mill and the appearance of other businesses under the Limited Liability Acts with many working-class members. These companies were confused with co-operation.

Into the second store movement, founded at Rochdale in 1844, the cotton operatives threw themselves heartily, and the Bolton spinners' trade union actually carried on a store of its own.[2] The hold which this form of co-operation acquired on the operatives of the north has never relaxed. The Co-operative Societies of Lancashire and the West Riding were founded largely by textile workers, and they have formed to a great extent the centre of their social life. In some places it became almost a social obligation to deal with the stores.

1. On all the above see *Report in Trade Unions for the Social Science Association*, p. 436; article on *Co-operation* in the *Economic Journal* for March, 1902; Reports, etc., 1892, xxxv. 2551 *et seq.* and 2562 *et seq.*; and *Histories of Co-operation.*

2. Minute Book, Nov. 30th, 1848; August 2nd. 1850; May 14th, July 21st, and December 21st, 1851; Jan. 6th and 13th, 1852. The shopman received ten shillings a week and 1¼ per cent on the profits.

CHAPTER X.

Trade Unions and Employers' Associations.

Recent Developments.

No conspicuous revival of trade unionism showed itself until after 1850, and speaking broadly, we may say that about the middle of the century the individual unions were growing up,[1] while in the last quarter of the century unionists were concerned mainly with the problem of amalgamation. Each district had to solve its own problems before the question of amalgamation could be faced successfully. A power-loom weavers' union of Great Britain and Ireland had been formed at Manchester in 1840, on the occasion of the Stockport strike, but the first sound organisation of power-loom weavers was not established until 1854 at Blackburn. Thereafter the organisation of cotton weavers proceeded rapidly; but, although an amalgamation of limited extent, namely the North-East Lancashire Amalgamated Society[2] (which had been entitled at first the East Lancashire Amalgamated Society) has been constituted as early as 1859, it was not until 1884 that the weavers' clubs united to form the Northern Counties Amalgamated Association of Weavers which recently contained 65,000 members out of a possible 179,000. In 1885 the Power-loom Overlookers' Amalgamation came into being, and the next year the flickering unionism among the card and blowing-room operatives, which appeared as early as 1830,[3] was steadied

1. In one union a revived earnestness is shown by the anxiety that strike-pay should be spent wisely. Any persons known "to spend their money foolishly" were to forfeit a week's pay (committee meeting of the Bolton Society, Sept. 20th, 1847); and the week following this decision it was resolved upon a happy after-thought that their wives should receive the money instead.
2. The societies contained in it altered from time to time.
3. Societies of card grinders and strippers belonged to the National Labour Protection Society.

by the establishment of the amalgamation wherein some 25,000 of the 60,000 workers of this character were recently united.[1] As regards the beamers, twisters, and drawers, local societies have existed for many years. The Manchester Society was formed in 1840; it broke up through a dispute two years later, and was re-formed in 1846. In 1863, the year of the cotton famine, it again fell to pieces, but as soon as possible after the recovery of the industry (in 1865) it was re-established. The Amalgamation which came into being in 1866, has had a continuous existence ever since with the usual periods of depression, and in 1890 its strength was increased by a new constitution. In Glasgow a society existed in 1833, but the present Glasgow society was not founded until 1855. In addition to the societies connected with manufacturing already mentioned, there are trade unions of Warp Dressers and Warpers, Tape Sizers, and Cloth Lookers and Warehousemen.

As the districts are so many it would be hopeless and useless to attempt a complete sketch of the vicissitudes of trade unionism among the spinners in this period, but the broad movements in a few places may be mentioned. The Ashton society which had some sort of existence in 1830, seems to have started almost anew in the middle of the century since its records are continuous only from 1857. The Preston society is said to date from 1814, but it certainly took a new lease of life about 1853. It was in Oldham and Bolton, however, that the most conspicuous revivals occurred. Early in the "fifties" the hand-mule spinners of Bolton began to combine with the unions in the neighbouring villages governed by the

1.

	In Unions.	Not in Unions.	Total.
Males	6,500	6,000	12,500
Females	18,500	29,000	47,500
	25,000	35,000	60,000

From returns to the Labour Commission.

Bolton list, but in less than ten years this early local amalgamation appears to have come to an end or sunk into insignificance. In 1861 the Bolton society of self-actor spinners was formed, and, as it was at first held in great contempt by the older society, a period of somewhat bitter rivalry succeeded. About 1880, however, the two associations combined, and every society among the spinners in and about Bolton was absorbed in one province which was rendered all-powerful.[1] The Oldham Province was established in 1843, but it did not then possess any real influence. The present secretary, who was appointed in 1868, exerted himself to centralise power and funds, but without effect until the later "seventies," when it became apparent that the strength of the union was that of its weakest branch, and a new scheme was adopted to transform the loose federation into a powerful amalgamation. The province used to raise the funds to cover its expenses by levies, but now all subscriptions are paid direct to the centre, and the branches are not allowed either separate funds or separate benefits. Moreover, the province lays down rules for the government of the branches, all of which are therefore at present of one type. Each branch sends to the provincial council one delegate, who must be a member of the branch committee so that he may represent the province in his district just as he represents the district at the centre.[2]

1. The growth of the Bolton Province is indicated by the following figures of membership:—

Bolton Society:—1861.	....	92	spinners.
1871.	....	470	,,
Bolton Province:—1881.	....	2480	spinners and 4099 piecers.
1891.	....	4233	,, ,, 8659 ,,
1898.	....	4428	,, ,, 9074 ,,

The increase is due partly to the inclusion of more societies, partly to the growth of the industry in the town, and partly to more exhaustive organisation.

2. The growth of the Oldham Province is indicated by the following figures, which must be interpreted as those in the previous note:—

1870—1.	....	2110	spinners.
1880—1.	....	3755	,,
1890—1.	....	6150	spinners.
1897.	....	6056	,,

In January, 1899, there were 8,734 piecers in the Province.

The Oldham and Bolton provinces, in fact, from being mere federations have unified into societies possessing mere branches.

As a result of the wide-spread adoption of the Oldham list there appeared in 1882 the United Movable Committee, on which the spinners' organisations of Oldham, Bury, Stockport, Rochdale, Blackburn, Huddersfield, Bradford, Halifax, and other districts, comprising over 7,000 spinners, were represented. The Oldham Province furnished over half the membership, and its general secretary was, *ex officio*, the secretary of the new body. The functions of the Movable Committee were to promote concerted action "for all questions in connection with general advances or reduction in wages under the Oldham list," and to issue monthly reports containing price-lists of cotton and yarn and other information relating to the industry. After the establishment of *The Cotton Factory Times* in 1885 the reports were not wanted, and, as the growing efficiency of the Amalgamation rendered the performance of its other duties less necessary, the Movable Committee ceased to exist.

No strong general amalgamation of spinners' clubs is to be found after 1830 until comparatively recent times. A federation had indeed been formed in 1842, but it proved somewhat of a dummy giant in spite of its 42 branches and 4,500 members.[1] The last mention of it occurs in the minute book of the Bolton Society in 1850; in 1848 it had been deserted by the Bolton, Manchester and Oldham Societies. The Amalgamated Association of Operative Cotton Spinners, etc., of Lancashire and the adjoining counties, was created in 1853, but at first it possessed no regular income and little influence. When the spinners engaged in disputes the local committees

1. See balance sheet for the last quarter of 1845 (Webb MSS., Textiles, i. 3).

managing them despatched begging delegates throughout the cotton district and even beyond. The amalgamation continued to be a feeble institution, meagrely supported and not completely representative, for some years. A new financial basis was laid down for it in 1870. In place of occasional levies, regular contributions were exacted of a penny a week from each member for a central reserve fund, and a halfpenny a week for a management fund. One or two relapses have taken place since, but on the whole the amalgamation has gained steadily in strength and efficiency; partially, no doubt, in consequence of the growing sense of solidarity among the spinners which followed as a natural reaction against local exclusiveness and self-sufficiency. At the beginning of the twentieth century its members numbered roughly 19,000 out of a possible 20,500, and to-day it enjoys a large settled income raised on a basis of weekly subscriptions of sixpence from each member. So far, indeed, did the centralising movement proceed that the late secretary even urged, but in vain, uniformity in contributions and benefits among all its constituent parts. Many would be pleased to see the amalgamation absorb the districts as the provinces absorbed their branches; but others believe that in view of local differences in conditions, and of diversity of interests, some degree of independence in the districts is desirable—though not complete independence, for the amalgamation performs an important office in holding the balance between the districts.

No federation proper of all cotton workers exists, but a general association, the United Textile Factory Workers, is constituted when questions of legislation affecting factory life become pressing.[1] The Textile Trades Federations

1. This association comprises to-day the spinners, weavers, card and blowing-room operatives, beamers, twisters and drawers, power-loom overlookers, and bleachers and dyers. Among other matters it has charge of the textile workers' movement for securing direct representation in Parliament.

of Nelson, Colne, Bolton and other places, are, in effect, trades councils to which as a rule the spinners at the present time do not belong. It has been proposed to form an International Federation, but the outcome of the proposal so far has been nothing more than the holding of International Textile Congresses, the first of which met at Manchester in 1894.[1] The spinners, moreover, confined themselves to their own trade on the whole in the second half of the nineteenth century, although they allowed themselves to be drawn into the United Kingdom Alliance of Organised Trades in 1867 and the Trades Unions' Federation in 1899. In the formation of the latter, however, they showed no fervour; indeed their adhesion was for some time doubtful, especially after the rejection by the special congress of their amendment to the official scheme which would have reduced federation merely to a system of partial insurance.

The trade-union movement of the second half of the last century, was, in comparison with that of previous periods, peaceable and law-abiding. The strike was no longer viewed as an insurrection. The operatives were ceasing to regard masters' associations as the malevolent combinations of their oppressors, and the masters were ceasing to regard trade unions as organised insubordination. A diminution of violence was noticeable as early as 1853 in the Preston strike, to take one example, and the Preston masters admitted it in their memorial to Lord Palmerston.[2] But even in the Preston strike the collection of funds was attended by intimidation, according to Henry Ashworth, and his statement is borne out by the notices which were inserted in the periodical balance-sheets

1. The evidence for the foregoing accounts of the later developments of particular unions and amalgamations is to be found largely in the notes and historical sketches in the Webb MSS.

2. Account of the strike for the Social Science Association.

issued by the men's committee.[1] One could scarcely hope for immunity from occasional acts of outrage under exceptional circumstances, and instances were certainly to be found in the cotton industry in 1866-7 as well as in the Sheffield trades. The Commissioners sent to Manchester brought to light the maltreatment of some "blacklegs" and the vitrioling" of a warper whose only offence was that he had taught his wife and children to warp, which was forbidden by the union. Passing to quite recent times, we may declare without hesitation that any violence which occurs is insignificant in comparison with that of the past. But "moral" suasion of a very forcible character is still employed to induce hands to join the union. That the refusal to work with non-unionists was not uncommon recently in some districts may be inferred from the fact that the employers' terms in 1893 included a clause, which was not adopted in the ultimate terms of settlement, declaring that they should not be called upon to discharge non-union workmen. Three years later the president of the Amalgamated Association of Operative Cotton Spinners urged openly that "the time had arrived when their members should not work with a non-unionist."[2]

The revival of trade unions after 1850 was accompanied

1. For instance, "If those piecers at Dawson's new mill do not pay better, young "Punch (old Punch's urchin) will come and break their ends."
"If those three or four spinners do not pay their subscriptions, Punch will bring his "iron clogs."
During the Padiham strike also, in 1859, weavers who would not contribute were threatened with visitations from "Punch" (see account of that strike for the Social Science Association). The visitations of "Punch" were probably not so humorous as the warnings.

2. Report of a speech delivered by Mr. Thomas Ashton in the *Cotton Factory Times*, October, 1896 (Webb MSS., Textiles, iii, 5). On this question see also Labour Commission, George Silk's evidence, question 682. Even when there is no definite refusal to work with non-unionists the position of the latter is made difficult. "No assistance must be rendered "to any person occupying a pair of mules, unless he becomes a member of our local associ-"ation," it is laid down in the rules of the spinners of Bolton. This policy is very old. In 1758 some weavers demanded that masters should employ only those who had served a full apprenticeship and contributed to their box. (*Appendix to Letter on the recent dispute between the check-makers and their weavers.*) And no member of the Oldham Spinners' Society of 1796 was allowed "to instruct any person in the art of cotton spinning (except "his own children and paupers who received relief from overseers of the poor) until such "person has paid the sum of one guinea thereto exclusive of entrance money and weekly "subscription." The Manchester Society of 1795 had a similar regulation, and it was approved by the Manchester Congress in 1830, which, however, classed the poor relations of masters with spinners' children and paupers as exceptions.

by a corresponding revival of masters' associations. Many of them were altogether new, but others were more or less closely connected with those of earlier years. The Preston Masters' Association, founded in 1836, had never been disbanded. It dealt with disputes having reference to wages up to 1846, and thereafter until 1853, though inactive, it was not dead. This dormant association "was revived, extended, and organised upon a new foundation, as early as the 18th of March, 1853."[1] The year 1853 saw not only the Preston Masters' Association revived and extended, but what was in effect an amalgamation of masters' associations formed to raise a defence fund for the support of the employers in Preston. This fund, raised by a weekly levy of 5 per cent. on the wages' bill of each employer, was distributed in proportion to the amount of capital rendered unproductive by the strike; and, further, the expense of importing labour from Ireland and the agricultural districts of Great Britain, and ultimately spinners from Glasgow, was charged to it.[2] Events at Preston do not form an isolated instance. Many other local associations of employers existed at the same time. The Blackburn masters were combined early in the "fifties," and it was their association which intervened in the Padiham strike of 1859 and ultimately caused its settlement. At Padiham the masters conspired, using the device of the penalty, to carry on the dispute of that year, and to support them the Burnley Association formed the Lancashire Master Spinners' and Manufacturers' Defence Society, which was joined by the following towns at least, in addition to Burnley: Preston, Clitheroe, Harwood,

1. Report on Trades Unions for the Social Science Association (1860), p. 214.

2. Report of Committee to manage the fund, 1854.

Colne, Sabden, and Marsden.[1] At Oldham a masters' association is said to have been in existence in 1829 (one was probably formed in 1825, as we have already observed) and it is supposed to have had a continuous history up to the present day; but a new and vigorous employers' association, which fused shortly after with the older association, was established in the same place in 1866.

Four extensive associations of employers for mutual support and concerted action exist to-day, two concerned chiefly with spinning and two with manufacturing. The former are "The Federation" (including nine local associations, of which Oldham is one), with twenty-one million spindles; and the Bolton Association, with seven million spindles; the latter are the North and North-East Lancashire Spinners' and Manufacturers' Association, containing not more than three million spindles, and the United Cotton Manufacturers' Association.[2] It is noteworthy that there is no amalgamated association of masters, as of men, in either spinning or weaving; many masters contend that local conditions are not sufficiently alike to render it desirable. The United Cotton Spinners' Association existed for Parliamentary and trade action, not for any interference with wages. This has now given place to the Cotton Employers' Parliamentary Association (established in 1899), which is to the masters what the United Textile Factory Workers is to the men. Further, we find that employers have not been without large schemes of national federation. The year 1874 witnessed the establishment of the National Federation of Associated Employers of Labour, consisting for the most part of Lancashire and Yorkshire associations connected with the cotton, worsted, iron, building,

1. Account of the Padiham strike for the Social Science Association.
2. The Chorley Cotton Employers' Association is not a member of any of the above, but it is represented on the Cotton Employers' Parliamentary Association.

engineering, and bootmaking trades;[1] but apparently it achieved little. Recently another national general association has been founded, under the title: "The Employers' Parliamentary Council," the object of which is to watch all legislation dealing with the relation of employers to workmen, and endeavour to mould it in accordance with the masters' views.

A few words might be added here on some quasi-political questions connected with trade unions. The unions of cotton operatives which are supposed to be highly specialised contain many different qualities of labour. The earliest spinners' unions included members who were not spinners, for instance, clerks, book-keepers, and weighers-out,[2] but they were not to be chosen for the committee. Even in 1860, rovers were admitted to membership of spinners' unions, on equal terms with spinners, but these rovers were men. The spinners refused to admit the ring-spinners, probably because they were all women, and recently some in authority have regretted it. Now the ring-spinners are organised with the card- and blowing-room operatives, but at Hyde a few few years ago they used to form a part of the piecers' association. The Oldham Society has lately admitted to membership the roller-coverers and under-engineers as separate districts. At the present time the Amalgamated Association includes spinners, twiners, roller-coverers, under-engineers and stokers, spinners, warehousemen, and overlookers. Diverse qualities of labour are to be found also in the weavers' associations; as well as weavers, there are winders, warpers, reelers, beamers, twisters, drawers, and even cord-cutters, and warehousemen, in some of the district associations. But the beamers, twisters and

1. *Practical Magazine*, vol. iii. 1874.
2. See Articles and Rules of the Cotton Spinners of Manchester, 1795, Rule x.

drawers, are mostly united in distinct societies with a distinct amalgamation. Unlike the spinners' amalgamation that of the weavers admits to membership all whom the districts include.

Jevons has written: "It is in Trades' Societies which combine many grades of workmen and several branches of industry that we naturally find the most enlightened policy. This amalgamation must gradually destroy selfish or exclusive notions, and it will often render apparent to the men of one trade that they are pursuing objects inconsistent with the welfare of their fellowmen in another trade."[1] It must, however, be remembered that the chance is considerable that the clashing of opposing wills may split the association along the lines of cleavage which mark conflicting interests. Moreover, it is extremely unlikely that all the constituent elements will be of equal strength, and if they are not a "will of all" is less likely to result than a will of the majority which may sacrifice the minority. Whatever industrial changes took place it would always be difficult for any grade of labour to persuade another grade that both ought to co-operate for the purpose of raising the ratio of the wages of the one to those of the other. The position is illustrated by the relation of piecers to spinners.[2]

When two or more grades of labour are associated in producing a joint product it is obviously desirable that each should be separately organised for the attainment of its private ends, and that the various associations should be connected in some fashion for the attainment of common ends. This is the council of perfection, which would result in so many distinct unions and such complex

1. Lecture on Trades' Societies, 1868.
2. See pp. 257-8. Weavers have objected to admitting the power-loom overlookers to a general union of all cotton operatives, saying that their interest is not that of the weavers, so long as they are paid in proportion to the output of those under them. Such a method of payment makes it their interest to "drive" the weavers.

arrangements, that union would cease to be strength, because of the power lost by friction. Therefore in practice many minor interests must be ignored if any common interest is to be attained. Other things being equal the more skilled the labour the fewer would be the different kinds of labour which we should expect to find in one union. Roughly, the more indispensable the labour (which means that its substitutes are few) and the less easily its skill is acquired, the more capable is it of standing in a union alone.

The problem of trade unionism which has been indicated above may be illustrated from the circumstances of the spinning industry. Inasmuch as the processes of preparing and spinning the cotton are now invariably associated, so that if the one cease for any reason the other must cease also, a strike of the spinners inevitably throws the card- and blowing-room operatives into a state of enforced idleness, and a strike of the latter likewise deprives the former of work in the mill. The two classes of labour, therefore, repeatedly suffer for each other, and as both work under the same roof, what the one endures from the conditions of a particular mill the other in all probability must endure also. At the same time, the antagonism of interest between the two bodies of workmen (consisting in the fact that an enlarged share in the joint product secured by the one might be at the expense of the other) necessitates independent, and to some extent opposed, combinations. It was proposed that the exigencies of the situation should be met by each union subscribing one farthing per member per week to a joint fund for the exclusive support of that body of labour which was deprived of its occupation through the action of the other, on the understanding that no work in a mill struck by the one union should be sanctioned by the other union. This

proposal, however, was rejected, and in its stead a system of joint action, without any financial arrangements, has been gradually worked out.

Let us now glance at some of the most prominent lines of constitutional development. There used to be a tendency among trade unionists to appoint as officials the members in rotation, or to choose them by lot. The tendency was no doubt encouraged by the popularity of the jury system, the bias peculiar to the early notions of democracy in this country, and by the fact that officers filled the posts of danger since they ran great risk of being made scapegoats in the days when victimising was common. In the first Manchester Society the only officials elected were some of the arbitrators:[1] the committee was then settled by seniority. At Glasgow the committee-men were selected by lot from names submitted by the mills, as they were also in the Weavers' Society (England) of 1824, if the nominations of the sections amounted to more than three. Again, the Stockport rules of 1824 provided that six of the committee should be selected from the general annual meeting, but that the remaining seven should be taken in rotation from the list of members.

Perhaps the most important change which has taken place in the constitution of trade unions is the decay of the general meeting. Even in comparatively recent times it partook of a large share in government. At Oldham in 1860 it met fortnightly to hear appeals, grant donations, alter rules, and in general to do what seemed to it good; but the growth of districts undermined its efficiency, which was never great, and it soon began to meet less frequently. Speaking generally, fortnightly meetings have been succeeded by quarterly, and sometimes even by

1. There were twenty arbitrators, but the three stewards chose four each. The arbitrators existed to represent the members in a very full manner: the committee governed the Society, but in certain matters it was compelled to take the sense of the arbitrators.

half-yearly meetings. A direct appeal to the members, however, is still made, as Mr. and Mrs. Webb have pointed out, when the success of a proposed course of action depends upon the approval and temper of those taking part in it; for instance, no strike can be entered upon without the direct sanction, by some large majority, of those who would be called upon to leave their work. Concurrently with the waning influence of the body of members speaking as a whole the power of the committee, especially of the permanent officials, increased in weight; it was even proposed to the Oldham Province so early as 1879 that the "Provincial Board ought to be the only power to sanction or close either general or individual strikes."[1] It is noteworthy that continuity of policy is frequently secured by the piecemeal appointment of committees, a method which was not unknown among the trade unions of early days.

In amalgamations the most notable feature was the choice of members from the same branch to act as the executive. The cotton spinners' federation, for instance, was governed in 1830 by a Manchester Council of three, which, when augmented by two delegates from the neighbouring district, was empowered to receive subscriptions. Meetings of delegates were to be held twice a year. The Bolton committee, again, was the committee of the amalgamation of 1842, though the delegates met periodically at Manchester. In early times this arrangement was necessitated by the difficulty of moving from place to place cheaply, rapidly and at convenient times—a difficulty which was, of course, less in the case of a localised industry than in one of national extent—and further by the few hours which the workmen could spare. Hence delegate meetings of the federation of the

1. Annual Report of Oldham Province, 1879. It argued thus: "It is an utter impossibility for the great body of members to know what is the best step to take in a great crisis; but the committee can know and being composed of practical men would be certain to act in the best way."

"forties" were held on a Sunday, and at Manchester, because it was easiest of access. That the first difficulty is now removed in great part is a fact that we need not here emphasise. The second hindrance, also, is now minimised, since the growth of local unions has necessitated the employment of paid secretaries, who form a body of professional representatives. We may observe, however, that a local executive was not so undesirable in times past, before districts specialised as to the character of their work. The custom survives, because of its conveniences, in the Bolton Province, where, except for the fact that Farnworth has a representative, only mills in the Central Branch are allowed to nominate for the Council.

It will be of some interest to examine in detail the constitution of the amalgamation which is at present the strongest of those existing among the cotton operatives, that is the spinners' amalgamation. The legislative power in this amalgamation rests with the general meeting of delegates, which is held quarterly, and when specially summoned. Each district and each province send delegates in proportion to the number of their members.[1] The general meeting elects a committee of thirteen which, with the secretary, treasurer, and president, constitutes the executive. "To prevent undue monopoly upon the executive council by any province or district," each is allowed to nominate one representative for every 1,500 members, or fractional part thereof. The committee so appointed elects from its body a sub-committee of six to deal with the less important matters[2] which arise in the business of the amalgamation. In cases of cessation of work the executive is compelled to summon a meeting of delegates, and if two-thirds of the meeting decide upon a strike then the question must be

1. At Oldham the representatives are appointed by the Province, but at Bolton by the Branches.

2. The Secretary decides which these are.

submitted to the members, of whose votes a majority of two-thirds is needful for a turn out. In the case of "individual disputes" the procedure is the same except that only the members at the mill affected are required to vote. The closing of all disputes is in the power of the executive council, and no province or district is entitled to strike-pay from the amalgamation for turn-outs which are not authorised by the amalgamation.[1] Up to 1860 there had been a board of directors, but in that year it ceased to exist, as it was felt that it rendered the executive machinery of the amalgamation needlessly cumbersome.[2] From 1860 to 1868 the executive consisted solely of the president, secretary, and treasurer. Two others were added in the latter year, and in 1870 a committee of seven others; then three years later a sub-committee of three was appointed to deal with the less important details of administration. It was not until 1884 that the present constitution was adopted; and only two years later it was resolved at a Council meeting that there be no sub-committee,[3] but very shortly afterwards the amalgamation agreed again to have its small sub-committee. Beneath the surface of these changes we can detect the oscillation of the members between the ideals of the most efficient executive and the most representative executive.

There exists a peculiar difference in constitution between the Oldham and Bolton provinces which is of some interest. At Oldham the mills are disregarded as units, but the central branch of the Bolton province is governed ultimately by a body of mill-delegates, in whose appointment the principle of proportional representation is recognised; and, moreover, at Bolton any mill in each of

1. The referendum, we observe, is used when the consent of the members is essential to the success of any course determined upon, as Mr. and Mrs. Webb have pointed out. Notice that the members have no power of initiative.
2. See preamble to rules of 1860.
3. August 4th, 1886.

the two divisions of the central branch in turn has the right to nominate a candidate for the vacancy in the Council which occurs every two months. Other societies of cotton operatives have constitutions lying between these two extremes. Sometimes each mill elects a committee-man; but sometimes, when the number of mills is great, each mill may submit a name, and from the names submitted the general or delegate meeting elects the executive. In other cases though the general meeting elects the executive, it is not allowed to take more than one committee-man from each mill; and in yet other instances there are no restrictions at all on the power of the general meeting. However, shop-meetings, to consider the grievances of the members of one or two mills, are occasionally held. It is almost needless to point out the advantages of mill-organisation, from the trade-union point of view, when several branches are collected in a province; it means that public opinion in the mill becomes a highly potent influence. According to the system of organisation by branches only, an operative may remain a member of his old branch after leaving the district.[1]

The relative importance attached by the cotton operatives' trade unions to benefits that are not connected with disputes has been by no means constant and the form of according assistance has undergone variations. There

1. These two methods were in use in the earliest times; and possibly the difference then was sometimes due to the origin of the society or the date of its foundation. The significant feature of the Manchester Society (1795) was that "20 members who are head shopmen to different masters in the cotton trade" were elected arbitrators monthly by the general meeting of members; and in 1837 in the same society the system of direct and indirect representation began with the mills. But as regards the Oldham Society (founded in 1796) in the rules reprinted in *1829* there is no mention of the mill group, nor is there in the constitution of the Stockport Society (1824). At Glasgow, however, the delegate from each mill handed in the name of a man in his shop, and from these names twelve were drawn of whom three were elected president, vice-president, and secretary, while the remaining nine became a court of directors. We scarcely need remark that the early weavers' associations were not likely to exhibit organisation by mills, because in the trade of hand-loom weaving the large factory had no prominence and the small shop was too small. In modification of this statement, however, the following description of the custom before the rules of the Manchester Smallware Weavers were drawn up in 1756 may be quoted from the preamble to those rules:—"As there is now in the town many Worsted "Small-ware Makers, every one of these who keep any Hands in this Branch we call a shop, "and each of these shops appoints a man to go in the name and behalf of the whole shop; "and these men when met, which is once a month, form what we call the Trade's Society."

was a time when the operative out of work went "on tramp"[1] with a book entitling him to assistance from any branch of his union and when aged spinners in distress were given recommendations by their unions entitling them to beg. At Bolton a fund was instituted for setting up old spinners in business,[2] and even superanuation schemes were not unknown.[3] The range of circumstances under which aid is given to-day depends largely upon the wealth of the trade unions.[4] The allowance of out-of-work pay for loss of employment due to fires, failures, break-downs, and temporary stoppages, and for funerals, accidents, and emigration is usual, and in addition benefits are granted by the richer unions to those who are unemployed for other social causes. Sometimes a little help is given in cases of sickness, old age, and infirmity. The Bolton spinners have instituted an old-age pension scheme, but the funds for this are kept distinct (the only case in which the funds for friendly benefit are kept distinct), and quite recently the amalgamated spinners decided to follow the example set by Bolton.

We cannot pretend in this descriptive sketch to discuss at all adequately the present fundamental claims of the cotton operatives, but a few words may be said to indicate their general nature. It was not until the "fifties" that the spinners began to emerge from the confusion occasioned by Owenism and Chartism, and the ideas of the unionism in modern Lancashire factories were not specifically formulated until about the "seventies." In

1. The Ramsey Congress, however, refused an allowance to those on tramp.

2. Committee meeting, August 11th, 1845; General meeting, August 29th, 1845. On October 25th, 1848, it was decided not to use the penny fund for the "turn outs." The subscriptions to this fund were first a halfpenny per week then a penny.

3. Bolton Minute Book, 9th April and 12th June, 1846. As early as 1824 the weavers of Scotland paid pensions to infirm members of three years standing over the age of sixty rule 26).

4. Some unions offer more than one scale of contributions and benefits.

fact the cotton industry had not in the "fifties" sufficiently developed for the notions current to-day to emerge. When cottons and yarns were only roughly graded and each business had its own private market to a great extent, and its own peculiar methods, products and perhaps trade secrets, it possessed more individual characteristics than the typical business does to-day.

The modern aims of the cotton operatives are compounded of the doctrine of "the living wage" and a claim to share in any increased normal profits. The movement for increased wages appears as a rule as soon as it is obvious that a period of good trade has begun, since this is the time when the operatives are strongest in their dealings with the masters. The operatives usually speak of average profits[1] instead of normal profits, though average profits and normal profits (that is, the profits made by the typical firm at the margin)[2] are not necessarily identical; but that the operatives really intend what is implied by the latter is evident from the fact that the average profits with which they are concerned are supposed to be measured roughly by "margins," that is, the differences between the prices of the product and the prices of the material used. Moreover, average profits and normal profits, strictly understood, will vary together under ordinary circumstances. Two quotations will serve to illustrate one side of the operatives' present views. In the *Cotton Factory Times* for the 17th July, 1896, we read: "We think it is necessary to utter a word of warning to weavers and others who may be tempted to offer to return a portion of their wages to the firm because the concern is not doing so well as it ought to do, or as well as others in the neighbourhood.

1. The report of the Amalgamation for 1888 says, "when we take the wages of spinners "at a mill, we never allow an employer to select the best and say if one can earn so much "why cannot others. We average the whole lot, and to be fair this must be done with "employers when estimating their profits."

2. As to the meaning of the "margin" see p. 254.

If a firm realises that it cannot manufacture with profit to itself, and that it is paying no more than others for labour, it is better that that firm, harsh though the doctrine may seem, should cease to exist rather than the operatives should accept a reduction in wages and drag the whole trade down with them. Weavers are not expected to ask for more than the list if a firm is making good profits, and they should not accept less than the list because the firm happens to suffer a loss." Again, the report of the Spinners' Amalgamation in 1891, after referring to employers buying cotton by "marks," proceeds: "There is only one way of dealing with these, and that is to see that our members do not suffer in pocket in consequence of their (employers' or managers') want of technical skill. We have continued to put this doctrine in practice for the past year by requiring compensation for the additional labour involved when bad work is in the creels." The operatives are apparently so shaping their policy as to force the freest operation of the law of survival of the fittest among the captains of industry, whom they make responsible for a normal success. While, however, they profess to leave all matters relating to the arrangement of factors in production unreservedly to the employers, except in so far as they involve the comfort of the operatives during work, the healthiness of processes, the hours of work, and so forth, it must be admitted that not infrequently the argument as to health and comfort has been strained with the object of preventing arrangements which the men regard as undesirable for some other reason, as for example, that it would reduce the demand for labour. The operatives, moreover, do not even formally allow that the employer is free to substitute some hands for others for reasons which are not economic, and the spinners have succeeded in establishing an under-

standing that a man must not be dismissed except for inefficiency, or insubordination, or because a reduction of hands is needful.

The views of the cotton operatives, it was remarked above, are a combination of the doctrine of the "living wage" and a demand for a share in any increased normal profits. "Wages must determine prices instead of prices determining wages" is the popular way of describing the one part of these claims, while the exact contrary expresses the other part. The operatives mean that a standard wage must be recognised, and that employers must settle their prices on the understanding that this wage is a fixed charge on the industry. If trade decline wages must not fall below this limit. Hence when proposals for reductions have been put forward the trade unions have frequently met them by counter-proposals to run short-time "till the industry rights itself," and hence, no doubt, in part the failure of the recent attempt to establish a sliding-scale in the cotton spinning industry.[1] It should be noticed that now frequent and considerable variations in wages are prevented by the Brooklands Agreement, which provides that advances or reductions in wages must never exceed 5 per cent., and that 12 months at least must elapse between readjustments. Early in the nineteenth century 10 per cent. variations were not unusual. Closely connected with the demand for a "living wage" is the more or less regular insistence of the spinners on a minimum time-wage;[2] this is partly due also to the operatives' conviction that in almost all cases of low weekly wages the cause is not the inefficiency of the workman but the badness of the cotton or some defect in the machinery. The demand for

1. There are, however, other causes working. See the author's article on sliding scales in the *Economic Journal* for June, 1903.

2. On October 23rd, 1880, the Master Cotton Spinners issued a circular in which they complained that Mr. Fielding, Secretary of the Bolton operatives, would not allow men to work unless they could earn a minimum to be decided by him.

continuous employment, or for allowances to cover losses due to slackness of work,[1] is also associated with the demand for a "living wage."

The fundamental claims advanced by the cotton operatives appear on the whole to lie beyond criticism. There is much to be said for checking some oscillations in wages by the short and sharp corrective of "short-time," and the emphasis of a minimum wage ought on the whole to effect good results, so long as it is remembered that circumstances arise under which the operatives would suffer least by accepting for a period wages beneath the minimum. For example, if a contraction in the magnitude of the industry were rendered ultimately essential through higher tariffs abroad the blow would be mitigated by being spread. Lower wages for all operatives and lower profits for all employers, accompanied by the gradual closing of the least paying works, might mean less misery in the long run than the maintenance of wages near their old level (could that be secured) and the sudden diminution by a large percentage of the amount of employment offered. This is a hypothetical case which is not likely to occur; but there are other cases in which the lower wage is better than "short-time" for a lengthy period. Each case in which short-time or lower piece-rates are necessary must be dealt with separately on its merits.

The emphasis of the minimum wage normally—which in effect may mean only that the employer carries more of the risks, paying a steady wage instead of sharing frequently with his workpeople the good and the bad—is of importance, especially among certain grades of labour, because the less the wage is given to violent move-

1. See, for instance, note to the rules of the Burnley Weavers, 1892, calling upon them to demand work to occupy all their time. Manufacturers will frequently provide less than a week's work for some of their hands, and the women as a rule do not object to the occasional holidays: in fact, from the point of view of those who have homes to look after, occasional holidays are to be welcomed.

ments the more dominant and satisfactory becomes the standard of living. We all tend to overlook how much we may gain by spending wisely, and it is only gradually after trial and mistake that we learn how to lay out an income of a given amount to the best purpose. Large surpluses over what is required to maintain the standard of life tend at first to be wasted, and in being wasted to demoralise somebody, while deficits—wages insufficient for one's customary needs—involve debts, or wasteful economies, or, if the deficit recur frequently, a subsidence of the standard of life to the low limits periodically reached by the wage (which causes waste at the times of higher wages), or the destruction of the standard of life altogether and therefore the loss of one of the most important agents of social advance. Some trade unions in fostering a class sentiment as to the kind of life to be aimed at, and expected among others, are doing a valuable work unseen. Social development is largely evolved in social groups; and none, we may remark in passing, have done more in holding steadily aloft a high ideal and making it effective than the co-operators.

But while trade unions among the cotton operatives have on the whole set before themselves in recent years fundamental aims which are both practicable and proper, it cannot be denied that they have neglected the interests of many of their members, either inadvertently or for the supposed good of their members as a whole. They have confined their actions too narrowly to the case of the man at the "margin," that is, one might explain, to the workman who could be dispensed with at the least loss. Distribution as between such a person and the employer of the same status is watched and bargained about; and beyond question the trade unions are right in closely concentrating their attention thus at the margin. But

exclusive application to the "marginal" problem of distribution is a mistake since the whole of the revenue earned in the cotton industry is not the product of marginal factors in production. Some mills succeed better than others, and the causes are numerous, but amongst them figure the efficiencies of workmen or of masters which are above the margin. So far as exceptional success is attributable to the unusual capacity or application of a workman he should receive corresponding remuneration. The trade unions have not done full justice to the man who is not marginal; partly, it is said, to discourage overwork on his part and the "driving" of his less able companions, and partly, there is little doubt, because of the unreasonable fear that the best men if they did their best might use up all the available work. It is unlikely that people of their own accord will work too hard unless they are stopped, and it is scarcely credible that the unions of cotton operatives are to-day so weak that they could not successfully resist, should it be needful, the "driving" of labour at the margin to the destruction of all comfort and even to the detriment of health, and the attempt to cut piece-rates with the object of allocating the whole benefit of the increased productiveness to employers. Yet the trade unions, there is reason to believe, have discouraged differential piece-wages and differential time-wages for work of the same kind. Thus the better hands tend to be reduced to mediocrity, and, so far as they are not, the employers who have the good fortune to secure them reap all the gain. There are employers to be found who declare that to pay anybody above the agreed trade-union rates is to court trouble, in view of their own associations and those of the men.

It is more in the policies adopted by trade unions to bring about their ends than in their fundamental inten-

tions that trade unions lay themselves open to criticism both from the point of view of the working classes and of the nation as a whole. To secure good terms for their members most trade unions have tried (*a*) to limit the supply of labour from which the people for particular kinds of work may be drawn, and (*b*) to tamper with the demand for labour by enforcing the employment of certain kinds of labour for certain operations. Thus the working-class as a whole is liable to be sacrificed in the interests of the members of a particular trade; and the community as a whole must suffer when the difficult task of arranging factors in production in the most effective combinations is taken out of the hands of those whose specialised function it is to perform it, except in so far as the employer's freedom is checked to prevent overwork.

The attitude of the spinners to women's work, and the apprenticeship regulations of weavers and spinners, are examples of the first policy. Among the spinners the difficulty of maintaining a limitation of apprenticeship was enhanced by improvements in machinery. Every new spinning machine carried more spindles than its predecessors, and soon additional piecing labour on the long machines became essential. The spinners, after futile efforts to suppress the long machines, met the difficulty by refusing to recognise all the piecers as "learners." Special emphasis was laid on this policy at the great Congress of Spinners of the British Isles at Ramsay, Isle of Man, in 1829. But the solution was temporary only. Improvements in machinery were not only adding to the size of mules but also diminishing the difficulty of spinning, so that in a few years an observant piecer could learn to spin without much "learning," especially on the self-actor.

The methods by which the spinners met the new

situation illustrate the second policy mentioned above. The spinners' new attitude consisted in an emphatic interference with the demand for their labour by enforcing a definite proportion between spinners and machinery, and insisting on a large share of the product of their labour and that of others. To-day, in consequence, there will usually work upon each pair of mules one highly-paid hand (the minder) and two or three hands with low wages (the piecers, with a scavenger sometimes), one of whom, the big piecer, will be roughly as efficient as the minder in many cases, especially when there are no girl piecers. Had it not been for the policy of the spinners other arrangements of labour at the mules might have appeared more generally. The conditions of work might have resulted in short virtual apprenticeships, ending in a moderate wage, and one perhaps which would be increased again moderately; but the policy of the spinners necessitated a system of long apprenticeship with a higher wage ultimately. Both long apprenticeship and short apprenticeship might be regulated so as to attract an equal number of hands, other things being equal. The extreme example of one system is the calling of the barrister, of the other that of the unskilled labourer whose maximum wage may be acquired at the age of about eighteen. The economic justification of each depends upon the number of years required for attaining efficiency. It is doubtful whether the system of long apprenticeship is always best in the cotton-spinning industry. It is argued for the system that the value of the machinery under the control of the spinner renders it highly desirable that he should be a picked man, and that the present arrangement offers a wide field for selection. But in view of the character of a spinner's work a narrower field for selection would probably yield equally good

results, and the best men do not necessarily remain to be picked. It would be in an enterprising and quick-witted person, if in anybody, that a uniform, constant, and uninterrupted effort to better his condition, would operate. Moreover, we must observe that the long apprenticeship system has frequently had an unfortunate influence on the spending of wages, because of the big change that may take place in an operative's income long after he has settled down to his conditions.

The spinners have been assisted in carrying out their policy by their own strength and the weakness of the piecers who are poor. The piecers have never had a successful organisation of their own. It is true that they have been members of the spinners' clubs from the earliest times—they were even admitted to the great amalgamation of 1829—and that since the "seventies," when the spinners began especially to encourage their enlistment, they have joined in great numbers. But in these clubs they are excluded from any share in the general management.

When one factor in production is more successful than its associates in the bargain as to wages, the obvious response of the employer is to dispense with the more expensive kind of labour and substitute for it the cheaper, so far as that is possible. Hence some master cotton spinners, at different times and places and in different degrees, have tried to introduce the "apprenticeship system," "the doffing system," "the coupling of wheels," and an increased number of mules to a minder, and they have taken care to employ the expensive labour only when in the prime of its efficiency, and to promote piecers to its work as soon as it showed decay. A few words must be said of these several systems. "The coupling of wheels" explains itself. It consisted in connecting two or three

pairs of mules with one pair of head-stocks (double- and treble-decking), so that the movements of two or three mules could be regulated at the same moment by one set of adjustments. The unions began to combat this system as early as 1835, and the dispute continued for many years afterwards; but as the mills became larger, and so capable of holding longer mules, the system of coupling ceased to spread. Still attempts were made to place two or three pairs of mules with one minder, even when they were not connected. This, however, the men found easier to resist, as each mule had its own head-stock, and the system meant—necessarily with the old machinery—that piecers were doing minders' work. Nevertheless a variation of it, under the title of the "doffing" system, established itself at Glasgow; but only after the excesses of unionism had led to its destruction there in 1837. Women were placed on the mules, and a highly-paid supervisor was set to control three or four pairs. The system will be found surviving to-day, but it shows no signs of taking root in Lancashire. These were all attempts to add to the work of the highly-paid hands; but the remaining schemes referred to above ("joining" and "the apprenticeship system") aim at introducing a class of labour at a lower wage. "The apprenticeship system" consisted in the promotion of a piecer to spinning on the understanding that he should receive less than a spinner's wage for a year or two. It was never extensively pushed and wherever it appeared it was soon suppressed. In association with this system we might mention the few sporadic attempts that have been made to induce spinners to pay premiums for their wheels. Far more threatening to the men's policy is the "joining system." According to this plan the usual total wage is paid for the product of a pair of mules; but the residue, after payment is made for piecing

and scavenging, is divided between the two spinners in authority, who take the place of spinner and big piecer. Although the unions set themselves stubbornly against "joining," the practice was not extinguished. In 1883 a general strike on the question took place in the Leigh district, where alone the system then flourished to any extent, but the strike collapsed through the refusal of the men in one mill to come out. The policy of the union after that disaster has been apparently to prevent "joining" from spreading. Whether the union will prevail against it or not, remains to be seen. It is an arrangement which is said to have advantages for some styles of work among certain classes of operatives. And it can scarcely be regarded as necessarily damaging to the interests of the operatives taken as a whole, since they gain from it a moderate wage at a comparatively early age in the place of a higher wage in later life.

Under the existing arrangements masters are sometimes induced to dismiss the elderly spinner when the frost of age has only slightly impaired his vitality, and promote the efficient and deserving piecer whose reward has been long in coming. This practice has given the union many uneasy moments. It is extremely difficult to check, because it is extremely difficult to find plausible grounds of objection. So far the union has tended to argue that the only legitimate grounds of dismissal are inefficiency or insubordination, and, instead of investigating each case of dismissal, to act on the supposition that men are being turned off for other reasons if more than a certain proportion of vacancies are created each year. The Bolton union even went the length of resolving at a general meeting "that no member of this society shall render any assistance to a piecer commencing to spin at any mill where the vacancies for spinners are filled up at

a less proportion than one practical spinner for every alternate vacancy."

In some cases the difficulty mentioned above with which the spinners have been confronted, that is a steady increase in the quantity of piecing-labour required, has been met by the employment of many girl piecers, who, however, are not allowed to become minders. The Bolton union has recently endorsed this policy by advising that the employment of girl piecers should be encouraged. The employment of piecers, we should have observed, is largely in the hands of the spinners. In reference to this policy the effect of the heat of some spinning rooms on the health of young females will have to be considered. For many years past girl piecers have been employed in large numbers on twining-mules, but the rooms in which twining is done are usually cool.

CHAPTER XI.

Methods of Paying Wages.

Three problems of wages at least should be sharply distinguished. There is firstly the question of what makes a wage the amount that it is—the fundamental problem of distribution as it affects the wage-earner. There is secondly the question of how—that is, by whose decision or by what arrangement or procedure—alterations in the rate of wages should be effected, if they are not left wholly to the determination of unorganised market forces, and when they should be effected. And thirdly there is the question of how best to bring about a correspondence between the wage and the wage-earner's efficiency and encourage the latter. The first problem is theoretical and the second and the third are practical, but the second and third problems can be satisfactorily dealt with only after the first problem has been solved. In the cotton industry the third problem in some of its aspects has received no slight degree of attention, with the result that highly complicated lists of piece-rates are now in general operation.

The method of paying by piece was necessary when spinning and weaving were domestic industries. In the chapter on hand-loom weavers some account will be found of the frequent arrangements entered into by weavers and dealers as to the prices to be paid for pieces of different kinds. Occasionally the lists agreed upon were observed for some years. The first power-loom weavers were certainly paid by piece in some cases at least, but probably a number of them received time-wages until the development of weaving-lists in the second half of the nineteenth century. All the jenny-spinners in the early factories,

however, were no doubt paid on a system of piece-rates since the factory jenny-spinners were not a new class of labour like the power-loom weavers, and the old jenny-spinners when they entered factories tried to carry their customs with them. The spinners of water-twist, on the contrary, were rough hands who were not exercising an old craft under new conditions, and they probably did not insist strongly on piece-wages whether they were paid piece-wages or not.

The report of the British Association on spinning lists in 1887 stated that "the first list[1] known in the spinning trade was that adopted at Preston in 1859." But the assertion was refuted in the appendix to the same report, which contains a copy of a Bolton list dated 1844. And evidence exists to show that spinning lists were used prior to 1844. The strikers at Preston in 1836 demanded "the Bolton list,"[2] and in 1823 the Manchester masters admitted that they had drawn up a *new* list of prices while denying that it embodied a reduction.[3] Many other references to lists which existed about that time are to be found.[4] It was said by David Holt, who was secretary of the Bolton Society for twenty-nine years, that the spinning list at Bolton dated from 1813, and that from the first it embodied the principle of discounts,[5] but I have not succeeded in finding evidence corroborative of this statement.

About 1830 the question of lists was being vigorously agitated, more especially with reference to discounts in

1. By a 'list' here is meant a general list as opposed to a private list.
2. *The Preston strike*, by Henry Ashworth. (Statistical Journal and Record of Useful Knowledge, p. 88.)
3. *Manchester Guardian* for March, 1823 (Webb MSS. Textiles, ii. 2).
4. *e.g.* Reports, etc., 1824, v. p. 559. Graham, of Glasgow, told the committee on Manufactures of 1833 that "when we put up our works" (in 1826) "the combinations" (of spinners) "gave us a list of prices we were to pay." Mr. Andrew in his *Annals of Oldham* says that "the boom of good trade in Oldham in 1825 caused the operative spinners to put their heads together for the formation of a *new* standard list to regulate spinner's wages," and that lists were obtained from neighbouring districts for comparison.
5. A letter to the *Bolton Daily Chronicle* Oct. 11th, 1877 (quoted from Webb MSS., Textiles ii. 2).

prices varying with the number of spindles on the mule; but with that matter we have already dealt to some extent. Discounts had been slowly coming into use with the increasing length of mules.[1] In 1830 the first attempt was made to secure an universal list; one was actually drawn up and adopted by the men, but though they decided to submit it to the masters it was never carried into effect.[2] At this time the custom of paying by a district list was not general and some firms even worked without private lists.[3]

During the later "thirties," and in the "forties," if the absence of records may be accounted evidence, no agitation occurred for the adoption, extension or development of lists. When the confusion of these years was past, however, payment of wages by general lists was again emphasised. The revived insistence on payment by list was due both to masters and men: to the latter because they rightly considered it injustice that those who did the same work should not be paid the same wage; to the former because they desired to prevent, as far as possible, casual differences in the costs of production of those dealing in the same market. Hence before the Oldham weavers were combined in a trade union of medium strength—for the Oldham Weavers' Association was not founded until 1859 and any earlier association was probably feeble—eleven leading manufacturers had agreed upon a list among themselves (in 1834), which they revised in 1846.[4] The Burnley weaving list was drawn up in 1843, and ten years later Blackburn secured weaving, looming, winding,

1. In 1792 the average number of spindles on a mule was about 144, in the later twenties about 300, and by 1834 about 400 on self-actors (see Baines, pp. 206—7). The latter number is deduced from the figures given by Sharp, Roberts & Co., there quoted. In 1877 the average at Bolton was 900 (Holt's letter quoted above).

2. Resolutions at the Manchester Congress of Spinners (Appendix ii. to *On Combinations of Trades*).

3. *e g.* Evidence of M'Williams to the Committee of 1838; *Poor Man's Advocate*, Jan. 1st, 1832; *Vindication of Chorley Spinners*.

4. Both are printed in the British Association Report on Weaving lists, 1887.

beam-warping, and tape-sizing lists through the action of joint committees.[1]

In the middle of the nineteenth century the operatives, both spinners and weavers, insisted more upon "lists" than upon anything else. Though the spinners on strike in 1853 at Blackburn, Stockport, and Preston did not urge the adoption of lists they spoke of securing the same rates throughout Lancashire.[2] But at Padiham six years later the demand of the weavers was for the Blackburn list,[3] as it was also at Colne in 1860 and in other places about the same time. The first object of the East Lancashire Amalgamated Power-loom Weavers' Association, founded shortly before, was stated to be "to keep up our present rate of wages to the standard list, and to be able to resist any attempts to reduce the same, and also to prevent one employer paying less than another for the same amount and quality of work, and more particularly to bring up the prices of those who are paying the lowest rate of wages."[4] In 1850 Ashton adopted a weaving list, and three years later Radcliffe and Pilkington. Other weaving lists appeared in rapid succession, at Preston in 1860, at Chorley in 1861, at Nelson in 1866, and at Hyde in 1867. The lists suffered frequent alterations, and some are no longer used. To quote from the British Association Report:—"Of these lists" (the twenty-two tabulated by the Committee) "the most important are the Blackburn list of 1853 for plain cloth, and the North and North-East Lancashire list of 1887 for fancy cloth. The Burnley, Chorley, and Preston lists are based on the Blackburn list, and the two latter lists relate to a fine class of goods. The

1. Account of the Padiham Strike for the Social Science Association, 1860, p. 453; Baynes' *Cotton Trade*, 1857.
2. Account of the Preston Strike for the Social Science Associatian, 1860; and pamphlet on the same subject by Henry Ashworth.
3. Account of the Padiham Strike for the Social Science Association, 1860.
4. *Report on Trade Unions to the Social Science Association*, p. 437.

Hyde, Stockport, and Ashton lists have been gradually superseded by the Blackburn list as regards plain cloth. The Nelson satin list and the Chorley fancy list have been combined into the North and North-East Lancashire fancy list." Since the information was gathered upon which the report of the British Association was drawn up further developments have taken place. The plain lists most in vogue were the Blackburn, Preston and Burnley lists until shortly after the Uniform List was issued in 1892. The Uniform List which has been adopted almost throughout the whole of the Northern Counties with the exception of part of Ashton-under-Lyne, which still adheres to the Blackburn list of 1853, and Bacup which now works on a list of its own, is virtually a compromise between the lists of Blackburn, Preston and Burnley. With reference to fancy goods, the lists now in force are based as a rule upon the Uniform List.

Among the spinners, Bolton acquired a new list in 1844; Blackburn followed with one in 1852, and Preston in 1859. Burnley, Bury, and Stockport had lists in 1867, while Hyde and Oldham waited until 1872. At Oldham it had been customary for each master to make a separate bargain with his workpeople; and the same custom prevailed in Preston prior to 1859.[1] So late as 1875 many places were still without lists, and many firms disregarded them where they did not exist and used private lists.[2] Some of the later lists were formed by the averaging of private or district lists, while others were made up piecemeal from portions of those already existing;[3] but at Oldham a new principle was adopted with which we shall deal hereafter. It must be remembered that all the

1. British Association Report on Spinning Lists, p. 11.
2. See answers to questions sent out by the Oldham Union in 1875 (Webb Collection).
3. See *e.g.*, British Association Report on Spinning Lists, p. 12.

spinning-lists mentioned so far, both those of earlier and later times, referred solely to operatives on jennies or mules. It would be tedious to trace in detail the steps of development in spinning lists; suffice it to say that most incidents in the mill, which are not dependent on the operative but tend to increase or decrease his work or his output, are now taken into account in the lists.[1] A survival of the fittest has taken place among the various elements; as witness, for instance, the wide-spread adoption of payment by length of yarn spun instead of by the pound. It used to be a common complaint that the men were defrauded by spinning being made finer than it was stated to be; but payment by length, which can be determined by an instrument known as the indicator, prevents this. The operatives have been so insistent on the use of the indicator that refusal to comply with their demand led on one occasion to a costly strike.[2] As among the elements of the lists, so among the lists themselves, the most appropriate have survived. For spinning, those of Oldham and Bolton are the favourites now, as the Blackburn lists used to be in an earlier period. In spite of the tendency in recent years to adopt the Oldham list nine principal printed lists are still used in the cotton industry, namely, those of Oldham, Bolton, Stockport,[3] Ashton, Hyde, Preston, Blackburn, Burnley and Bury. There are in addition written district lists and private lists scattered up and down. Hull, for instance, with its one mill has recently acquired a list, but the prices in it vary only with counts and dozens.

1. Prices used to be expressed in pence and fractions, but the more minute grading of the lists, following on an increase in the number of counts, has necessitated the employment of decimals.

2. See Fielding's Reports and Extracts from his Diary, especially in 1880, 1881 and 1882. The Chorley strike of 1882 was on the question of indicators. The men of a particular firm demanded its use, and when the master refused to accede to their demand they struck work. Thereupon the masters locked out the whole district. The dispute lasted twenty-two weeks and the men were forced to yield.

3. The Oldham list has been generally used in Stockport since 1883.

The spinning-lists in use differ greatly, for they were drawn up at times far apart, and for different counts of yarn, and to suit different local conditions. The Preston list of 1866 allowed discounts up to 900 spindles; Bolton in 1844 took the standard as 324 spindles and allowed practically no discounts after 540 (only one half per cent. on every dozen) and by 1877, when this list was still in operation, the average size of mules in Bolton was about 900, varying upwards to over 1,200.[1] Under the new list of 1887 Bolton does not allow discounts on spindles above 900 on weft mules and 806 on twist mules. The imagination of the spinner of 1844 who could have pictured mules of over 1,000 spindles would have been bold indeed; yet to Oldham in 1876 provision for 116 dozen spindles did not seem absurd. Again some differences must be attributed to the fact that speeds have advanced considerably more on the coarse than on the fine counts, and that in the more recent lists attempts have been made to correct the alterations that have resulted in the ratios of wages earned on various qualities of work.[2]

It is commonly said that as the Oldham list is the only "speed list"[3] it alone encourages improvements in machinery. But the division of gains from increased speeds under the Oldham list applies only to "quick speeds," which technically refer solely to movements faster than three draws in fifty seconds, speeds which are possible only on Oldham counts, and where these counts are produced the Oldham list is almost always used.[4] Apart from the arrangement for quick speeds, however, one very important difference exists between the Oldham

1. Holt's letter of 11th Oct., 1877, previously quoted.
2. The replies to the list of questions sent out by Oldham in 1875 are full of interesting information as to the great differences between local lists and systems then.
3. By a "speed list" is meant one which provides for a division between masters and men of the gain accruing from the increased speed of machinery.
4. Under the Oldham list wages increase for all speeds above 3 draws in 50 seconds by the fraction of half the increased product to the old product.

list and other lists. The former takes as its basis a definite wage, the others a definite price per hank. Here are two lines each from the Oldham and Bolton lists to illustrate the difference: —

From the Oldham List:

Number of doz. spindles.	Total earnings. £ s. d.	Percentage Spinners.	Percentage Piecers.
115	3 15 2	51·45	48·55
116	3 15 4	51·55	48·45

From the Bolton List:

Number of spindles on each mule.	96's Count per 100 lbs. d.	98's Count per 100 lbs.
888	198·81	205·01
900	197·56	203·74

(The prices for two counts only are given in this extract.)

At Oldham the powers of the machinery in each mill are tested and piece-rates are then settled which will provide the minimum wage given in the list for mules bearing the number of spindles on the machinery in question. Hence it would be thought that all gains from improved machinery, or better cultivated or prepared cotton, must accrue to the masters at Oldham, but to the men elsewhere. As a matter of fact, however, a minimum wage is assumed as a basis everywhere. The operative spinners' amalgamation has declared that it must be understood that the men are not to suffer if machinery is antiquated or cotton bad, and the actual weekly wage is taken to indicate whether materials are, or are not, up to the standard. Moreover Clause 6 in the Bolton list of 1887 declares that "the standard speed shall be taken in each mill as the speed usually run at such mill. In case of alteration to a speed below such standard the price per

100lb. to be increased equal to two-thirds of the proportionate difference in reduction in size of the rim."[1] When new machinery is laid down, or when alterations are made, the men are put upon time-wages until the machinery settles down and its powers are known. Different mills have different normal speeds and the weekly task-wage, therefore, on the same sort of work, is not quite the same in all cases. Under the Oldham list, on the other hand, if the union officials are vigilant, a uniform weekly task-wage on the same sort of work can be more closely secured—not necessarily a uniform weekly wage, because some work involves more labour or ability than other work, and this is recognised in the lists. The difference between task-wages, however, under the piece-rate lists are not really considerable. If they become so, the employer is pressed by the union on the ground of "bad work" or bad machinery (for the amalgamation has declared that men on inefficient machinery ought to be paid above list price),[2] and he may be forced to buy better cotton, so that his speeds may be put up, or to pay, or increase, allowances.[3] Nevertheless, the Oldham system is obviously the more satisfactory because it is the more automatic and so offers fewer grounds for dispute. Hence a list of minimum wages was drawn up which might be used in Bolton as a basis when the indicator was adopted. Although under the Oldham list masters tend to receive at first all the advantages resulting from improved

1. This clause has been the occasion of numerous disputes. "The speed usually run" is not sufficiently definite. Recently a dispute occurred in a mill where, more for the convenience of customers than for any other reason, small quantities of a yarn, which could be easily spun at quicker rates than the standard speed of the mill, were produced slowly to save trouble in altering the rim to bring up the pace. Ultimately the firm received a big order for those yarns and naturally found it worth while to put on the higher speed. The men thereupon claimed that the old slow speed was "the speed usually run" on those yarns in the mill, and demanded all the benefit of the greater rapidity of production.

2. Report, 1889.

3. It is now generally admitted that employers must pay allowances if material is bad so that the work is made heavier, or so that speeds have to be reduced, for the worse the cotton the less the speed. See *e.g.* clauses 5 and 12 of the Oldham list and clause vi. of the Bolton list.

machinery or better cotton,[1] it does not follow that they retain them, for the men may condemn increased speeds as adding to their work and secure allowances, or they may move for an increase in standard rates. In point of fact wages are not determined automatically by the lists, detailed as they are: much is left to the manner of their application under the doctrine laid down by the amalgamation that "the whole of the lists in force in the manufacturing districts are based upon the supposition that fair material and appliances will be supplied to the hands, so as to enable them to earn a fair wage."[2] It scarcely need be said that in the case of weavers' wages still more depends upon mutual arrangements. For in manufacturing the number of factors affecting wages are greater than in spinning; the varieties of patterns are numerous and constantly changing; and all incidents, therefore, cannot be taken into consideration in the lists.[3]

One peculiar difference in the results given by the Oldham and Bolton lists calls for notice. The Oldham list provides a lower wage for Bolton counts than the Bolton list, and the latter provides a lower wage for Oldham counts than the Oldham list. One explanation offered is that Oldham men definitely decided that under their list, the coarser the counts the higher should be the wage, instead of the lower the wage as at Bolton, because they held that the coarser counts entailed more work on the part of the operative than the fine counts. They asserted that the fine counts did not require so much greater skill, if any,

1. Compare the following passage from the *Cotton Factory Times* for June 6th, 1894, "The Spinning Companies in the Ashton District are in favour of the Oldham list, and doing away with the district list, but the private firms which have less mules, and do not run the machinery anything like the speed the limiteds do, are content with the old lists, because a change will not benefit them the same as it will the limiteds."

2. Report, 1889.

3. Compare the following from *The Cotton Factory Times* for August 2nd, 1895:— "The officials of trade unions connected with the cotton trade find a large portion of their "time taken up in attempting to fix reasonable prices for the varying and ever changing "classes of work which are introduced almost every few months."

than the coarse counts, after the invention of the self-actor; and that the Bolton system was in all probability largely a survival; certainly that it would be a survival within the range of counts produced at Oldham. The explanation is adequate to meet this particular case; but I have heard it asserted that the highest wage that can be earned on any particular counts is frequently given by the list peculiar to the district within which those counts are chiefly produced. If this be so the explanation might be that the cost of production is less in those districts in which they are specialities, and that therefore other districts can compete with them only at the expense of wages.[1]

The system of paying wages by piece has spread in the cotton industry. From the drawing-frame to the loom piece-rates are almost universal. In the blowing-room and on the carding-machines, however, the hands are still paid time-wages, for the reason no doubt that variations in the output are due much more to variations in the cotton and machinery than to the men's efforts. When quality is of great importance it is declared by some masters to be more economical to pay time-wages even from the drawing-frames, and to watch each hand and vary wages with efficiency, so far as the demands of the trade unions leave it possible. In many cases the ring-spinners have acquired quite complicated lists on a small scale, according to which their wages vary as the speed of the spindle, the number of spindles, and the size of the twist-wheel.[2] Piecers' wages are still

1. According to the Annual Report of the Bolton Masters' Association for 1894, the wages paid at Oldham for "Bolton Counts" give it an advantage of from 4 to 30 per cent. which, however, is sometimes made up by extra payments. See further, *e.g.*, *Cotton Factory Times*, 25th May and June 6th, 1894. In May, 1896, the Oldham hands tried to get Bolton prices on "Bolton Counts." The discrepancy existed in 1875 (see answers to questions sent out by Oldham).

2. The larger the twist-wheel the greater is the quantity of twist put into the yarn, and consequently the less is the length of yarn turned out in a given time.

definite weekly amounts. We must not fail to notice that greater accuracy in the system of payment by piece has been insured by the adoption of the "Particulars Clause." This clause first appeared in the Factory Act of 1891 and it then applied only to certain classes of workers in textile factories. By the Factory Act of 1895 it was given extended application and now it has statutory reference to all workers in textile factories who are paid piece-rates. It may be extended to non-textile factories and workshops by order of the Secretary of State with such modifications as are deemed desirable.[1] The clause declares that occupiers of factories must cause to be given to operatives particulars of the rate of wages applicable to the work to be done by them and also particulars of the work to which that rate is to be applied, so that operatives may be enabled to calculate for themselves the amount of wages due to them.

No attempt has been made by any class of cotton operatives to bring about a system under which the prices paid would increase in some ratio, inversely as the time of the output, so far as the increased output was due to the operative and not to the quality of the machinery. With some of the obstacles that have stood in the way of such an arrangement we have already dealt—namely, the opinions of the operatives and the fear of scamped work. Another obstacle is the difficulty of drafting a general regulation by which differences in the time-output that result from differences in machinery may be excluded. In some cases the time-output may depend in a high degree on the operative's quickness of perception, judgment, and action, and in such cases it is a misfortune that his efficiency should pass without recognition. The rapid worker saves

1. The power to extend the application of the Clause has already been exercised in several instances.

charges on capital account since he produces more than the slow worker from the same quantity of machinery. If the operative is to be given what his briskness saves, he must be paid a piece-rate which increases as his time-output, but at a diminishing rate. The rate, of course, would depend upon the saving effected by speed in each particular case. As a rule, perhaps, a roughly graded bonus system would be all that could be attempted in view of the impossibility of calculating with any degree of exactitude the saving due to the operative's efficiency.[1]

The second problem of wages mentioned at the beginning of this chapter is a great deal more difficult of solution than the problem with which we have dealt in detail above. The second problem was concerned, it will be remembered, with the times when alterations should be made in the rate of wages, the amount of such alterations, and the machinery for effecting the alterations. It is sometimes suggested that a mechanical device might be adopted for bringing about suitable movements in wages at suitable times, and the system of sliding scales has occasionally been urged as such a device. However, the sliding scale that was proposed recently in the cotton spinning industry was undoubtedly viewed with suspicion by many operatives and masters, and the failure to secure agreement upon its terms pointed to a lack of conviction as to its desirability. It was proposed that wages should vary as "margins," that is, differences between the prices of cotton and yarns. But there are many kinds of cotton and of yarns, and profits are affected also by other costs than those of wages and cotton; for instance, the prices of coal and machinery and the costs of transport. Moreover, there were other fundamental objections: that wages ought to vary as anticipated profits and not as past profits, since wages are

1. Upon this question see also pp. 254-5.

the magnets by which labour is drawn in suitable quantities into each industry; and that drawing up a sliding-scale involves bargaining as to the wages to be paid under hypothetical circumstances which may never arise, and certainly cannot be taken properly into account until they do arise. Besides, there are obvious disadvantages associated with the alteration of wages at fixed times, and at fixed times only.[1] The present arrangement by which a joint committee is called to discuss the question of wages when masters or men desire a change, on the understanding that changes shall take place by 5 per cents. only and not more frequently than every twelve months, is probably the best that could be devised. And discussion, if both sides try to be fair-minded and to keep their tempers, is more likely to lead to satisfactory results than a hard and fast rule connecting wages with "margins" or the decision of an arbitrator. Arbitration has had its day of popularity in the cotton industry, but now it is rather distrusted and less is said about it in trade union rules than a few years ago. An arbitrator belonging to the trade is open to suspicions of bias, and an outsider may make serious mistakes through his ignorance of the industry. Hence arbitration is now felt to be a cutting of a Gordian knot that never need be tied—that is the arbitration which tries to settle fundamental question of the proportions in which the gains or losses of an industry should be shared. Arbitration is still useful upon points of interpretation of agreements, and conciliation which aims at keeping discussion smooth and making disputants patient can avert strikes and lock-outs that might otherwise arise.

In conclusion, we must notice a sliding arrangement of

1. An analysis of the system of sliding-scales by the writer will be found in the *Economic Journal*, June, 1903.

a peculiar character which was in operation a few years ago between a number of spinning lists. It used to be customary for agreements to be made in several districts that wages should rise and fall with advances and reductions in some other district. Wages at Oldham in this way came to be the standard for many places. But both masters and men at Oldham finally awoke to the fact that they were fighting the battles of the trade. Other masters outside Oldham also objected to the arrangement on the ground that their trade might not afford increased wages even if the Oldham trade did, and the system thereupon fell into disuse. The increasing specialisation of districts, in respect of the yarns produced in them, was no doubt instrumental in rendering generally unworkable an arrangement which had at least been possible, if not desirable, some time before.

SELECT BIBLIOGRAPHY OF AUTHORITIES.

Relating to Conditions in Early Years.

This bibliography is not intended to be exhaustive. Indeed, no bibliography which is not designed as such, but is the by-product of a book, could be even approximately exhaustive, since there generally comes a time to seekers for documentary evidence when further search would add little of value except to the bibliography. I have tried to avoid the danger, into which it is so easy to slip in drawing up lists of authorities on fairly modern topics, of presenting much chaff with the wheat; and perhaps through my siftings some wheat has gone with the chaff. My object has been to give an account of what has appeared to me to be the most important material for the purposes of this work, except in so far as it deals with present conditions, and not to tabulate all the material. The published matter on present conditions, technical, economic and social, I have not attempted to tabulate.

Other bibliographies relating more or less closely to some of the topics discussed in this essay have been prepared. There are those attached to Mr. and Mrs. Webb's *History of Trade Unionism* and *Industrial Democracy*. Held's *Zwei Bücher Socialen Geschichte Englands* contains a useful list of books, and on pages 391—406 a short, critical account of some works relating to the coming of the factory system and its effects. Another good table of printed matter is appended to Hammond's *Cotton Culture and Trade*, and Mr. A. C. Bowley and Miss Hopkinson have published a very full bibliography, having reference to questions of wages, in the *Economic Review* for October,

1898. A list of authorities, the same in scope as the latter but less complete, is appended to Bowley's *Wages in the United Kingdom in the Nineteenth Century*. In section xv. of that work the evidence upon wages in the cotton industry is dealt with and I have not repeated it here. In addition to the bibliographies already noticed there are those in Hutchins' and Harrison's *History of Factory Legislation* and Oppel's *Die Baumwolle*.

I had nearly completed my chapter on factory legislation as it affects the cotton industry, and prepared my list of authorities, before Miss Hutchins' and Miss Harrison's work came into my hands. For the revision of my chapter I have found it most useful. The overlapping of treatment is, I think, less than one would expect—partly, no doubt, because the design of the two pieces of work is not the same. Any points of difference between us in opinion, the readers who peruse both books will discover for themselves, without special direction. But while there was little to be said for sinking my chapter there was nothing to be said for retaining my bibliography, in so far as it bore upon factory legislation, in view of the excellent bibliography with which Hutchins' and Harrison's book concludes. I have therefore discarded it. For authorities my readers are referred to the parts of Hutchins' and Harrison's bibliography bearing upon the factory legislation which applies to the cotton industry. I have nothing of importance to add to it, unless it be Gardner's and Kenworthy's letters, included in *A selection of Facts and Arguments in favour of the Ten Hours Bill*, (see p. 297), and Gardner's points appear again in one of the factory inspectors' reports as Leonard Horner verified his statements.

The authorities that follow are grouped under the headings stated below. No document is placed under more than one heading: each has been assigned to the

group to which it seemed primarily to belong, though it might contain important evidence under another head. Such general works as Cunningham's *Growth of English Industry and Commerce*, Toynbee's *Industrial Revolution*, and Held's work mentioned above, have been omitted from the lists that follow. The bibliography is divided thus:—

A. Parliamentary Papers.

I. Regulation of wages, hand-loom weavers and industrial conditions.

II. Trade Unions and other Combinations.

B. Other Authorities.

I. Works relating primarily to industrial and commercial conditions.

II. Works relating primarily to labour questions.

(Books of which the location is not given will be found in the library of the British Museum.)

A. PARLIAMENTARY PAPERS.

I. Regulation of Wages, Hand-loom Weavers and the Cotton Industry in Early Years.

[From this list papers bearing only remotely on the question of the development of the cotton industry are omitted. For example, no account is given of the Committee on petitions relating to the Orders in Council (1812, iii., 1—849) as they are not dealt with in the body of this work, or of the Committee on Emigration (1826, iv., 1—382; 1826-7, v.)]

Paper 38, dated 1780, pp. 6 (in vol. v. of Parliamentary Reports containing those from 1778 to 1782.)

Report from the committee to whom the petitions of Cotton Spinners and Cotton Manufacturers were referred. The Committee decided that the manufacturers ought not to be deprived of the use of the patent carding, roving, spinning and twisting machines.

Paper 774c, dated 1793, pp. 16. (in vol. xxxviii. of Parliamentary Accounts and Papers containing those of 1792–3.)

Report of a committee of the East India Company on the Cotton Manufacture of Great Britain. The committee dealt with the question of the effect of the importation of India goods. To the report are appended a copy of the Court's Memorial on the Cotton Manufacture in 1788 and statistical appendices. The Report is dated 1st February, 1793.

1801, iii., 135—8.

Report of the Committee appointed to enquire into the state of the existing laws as to the relations between Masters and Servants, and to consider the necessity of further provisions and amendments. Reports that the existing laws for settling disputes were applied only to servants in husbandry, and recommends an extension of the system of disputes being heard and determined by the magistrates.

1802—3, viii., 889—999.

Minutes of the evidence taken before the committee, to whom the several Petitions were presented to the House in this Session (1802–3), relating to the Act 39 and 40 George III., "for settling disputes between Masters and Workmen engaged in the Cotton Manufacture." Contains evidence from weavers and masters in both England and Scotland.

1803-4, v., 211—3.

Report of the above committee, in which they recommend such a Bill as became law by the Act 44, George III., chap. 87.

1808, ii., 95—134.

Evidence given to the committee on the Petitions of several cotton manufacturers and journeymen cotton weavers. Contains evidence from many masters and operatives as to the need for a minimum wage. Figures are given showing the fall in wages since 1796.

1808, ii., 135—44.

Evidence to the committee on Dr. Cartwright's Petition. Contains a memorial from Manchester manufacturers, and evidence from William Radcliffe, of Stockport, among others.

1809, iii., 311.

Report of the committee appointed to consider the weavers' and cotton manufacturers' petitions from England and Scotland. The committee strongly and unanimously advised that no legislation take place in the matter of (*a*) a minimum wage, (*b*) limitation of apprentices, and (*c*) uniformity of prices.

1810–11, ii., 389—406.

Report on Petitions of manufacturers, merchants, weavers, spinners, mechanics, labourers, etc., of Lancashire and Scotland. The committee reports that only harm could result from the adoption of any of the proposed remedies for distress and insists that the only safe policy is to leave things alone. The remedies suggested in the evidence were (*a*) grants of money to tide over present distress, (*b*) Government depôt for cotton goods so that manufacturers may not be dependent on commission houses, (*c*) fixed minimum wage regulated by arbitrators appointed by magistrates, or otherwise, (*d*) tax on steam-looms, (*e*) apprenticeships of seven years.

1812, ii., 89—94.

Report from the Select Committee to whom the petition of Samuel Crompton was referred.

1823, iv., 265—487.

Report from the Select Committee on the law relating to merchants, agents, or factors; together with evidence. Pp. 278–9 deal especially with the trade in raw cotton. Pp. 276–7 deal especially with the trade in British manufactures. Important evidence was given by Messrs. Trueman, Yates and Hope, who were connected with the trade in raw cotton. In consequence of the Report the Act 4 Geo. iv. *c* 83 (repealed by 52–3 Vic. *c* 45 *s* 14) was passed. It gave a consignee a lien on goods to the amount of his advances and protected others who lent to him, to the amount of such advances.

1830, x., 221—33.

Report from the Select Committee on Manufacturers' Employment. They report considerable fluctuations of employment which have been productive of great distress. No evidence printed.

1833, vi., pp. 801.

Report from the Select Committee on Manufactures, Commerce and Shipping. Only the evidence was reported. Information on industrial and commercial methods was offered by witnesses connected with the cotton trade.

1834, x., pp. 717.

Committee on Petitions from Hand-loom Weavers. The committee recommend a renewal of the investigation. On page 451 is a copy of the weavers' petition presented in 1808.

1835, xiii., pp. 439.

Report of the Hand-loom Weavers' Committee. It recommends that John Fielden's scheme be adopted. It states that the most prominent causes of distress seem to be (*a*) power-looms, (*b*) war taxation, (*c*) contraction of currency in 1816, 1826 and 1829, (*d*) exportation of yarn, (*e*) low wages causing longer hours of work. Of these it lays peculiar emphasis on (*c*) and (*d*). In the evidence given to the committee in both years of its sitting, distress had been attributed also to (*f*) corn laws, (*g*) competition among manufacturers and commission houses, and (*h*) want of combination. Among the remedies suggested were (*a*) a tax on steam-looms, (*b*) limitation of hours within which they might work, (*c*) compulsory apprenticeship rules, (*d*) a central board to fix a minimum wage, (*e*) local boards, consisting of an equal number of masters and men to fix wages, (*f*) that the average of the highest prices paid in a district by a majority of the firms doing half the trade, be the minimum wage (John Fielden's proposal).

1839, xlii., 515—728.

Hand-loom Weavers. Reports of Assistant Commissioners. Reports on the South and East of Scotland. Also reports on some Foreign Countries.

1840, xxiv., 597—717.

Hand-loom Weavers. Reports of Assistant Commissioners; that on Yorkshire (West Riding) and that on Ireland.

1840, xxiv., 597—717.

Hand-loom Weavers. Reports of Assistant Commissioners; that on the counties of Lancaster, Westmoreland, Cumberland, and part of the West Riding of Yorkshire; and notes and observations made during a Tour through the Weaving Districts by W. E. Hickson.

1841, x., 273—414.

Report of the Commissioners appointed to consider the condition of the unemployed hand-loom weavers. The commissioners were Nassau William Senior, Samuel Jones Lloyd, William Edward Hickson and John Leslie. The commissioners went beyond the terms of the reference and considered the condition of all hand-loom weavers. After describing the state of affairs and exposing the fallacies involved in most of the popular remedies suggested, the commissioners proposed more free trade, the protection of workmen against combinations, more education and emigration, the encouragement of good designs and a cheap means of copyrighting them.

1843, xlv., 119—70.

Returns of numbers of people removed from the agricultural districts to the manufacturing districts as the result of letters from R. H. Greg and Henry Ashworth to Edwin Chadwick, secretary to the Poor Law Commission. The numbers who died from accident or otherwise, and the wages earned, are also given. The immigration was carried on from the end of 1835 to the spring of 1837 under the management of Mr. Muggeridge (Manchester) and Mr. Baker (Leeds). Their reports are given in the 2nd and 3rd reports of the Poor Law Commissioners.

1847–8, li., 247—51.

Memorials from the directors of the Chamber of Commerce and Manufacture at Manchester, and from the Cotton Manufacturers of Glasgow and the vicinity, recommending the deportation of numbers of unemployed operatives, heretofore engaged in the Cotton Manufacture, with a view to the cultivation by them of Cotton in the British Colonies.

II. Trade Unions and other Combinations in Early Years.

1812, ii., 307—11.

Report from the committee of secrecy. Reports organised rioting in Lancashire, the West Riding of Yorkshire, and certain parts of Cheshire bordering upon Lancashire; meetings of delegates, a secret committee and an oath to punish traitors with death. The object of the disturbance seems to have been the destruction of machinery. Much of the evidence upon which this report and the other reports of committees of secrecy were based was worthless.

1817, iv., 1—7, 9—14, 17—20.

Reports from the Committee of Secrecy. They contain an account of the march of the blanketeers and of a projected rising at Manchester on March 30th, 1817, which never took place, and in all probability was never seriously contemplated.

1818, iii., 49—53 and 55—58.

Reports from the Committee of Secrecy.

1824, v., pp. 620.

Reports of the Select Committee appointed to inquire into the effect of laws relating to the emigration of artizans, the exportation of machinery and combinations of workmen and others.

The following important papers were handed in :—

"Document," presented by Glasgow cotton spinners and appeal of workmen (611—3).

List of prosecutions of workmen (Salford Sessions) (609–10).

A. List of shops contributing to the Staley Bridge strike in 1810 and receipts for the week ending June 9th, 1810 (604—8).

App. B. Return by James Anderson, Deputy Clerk of Justiciary in Scotland, of trials of Workmen for Combinations—especially numbers 4, 5 and 6 (500—524).

App. C. Memorial of the Subscribers, Proprietors of Cotton Works in Glasgow, and its vicinity, to the Right Honourable Robert Peel and appendices to the same. Signed by 25 of the principal manufacturers in Glasgow. They pray for protection against the atrocities perpetrated by trade unions (524—532).

Intimidating letter (479). Resolutions at a meeting of weavers' delegates on 5th September, 1818 (395).

Numerous masters and operatives connected with the cotton industry gave evidence to the committee. Six reports of evidence were prepared, and to the sixth the committee prefixed their resolutions. In these they say that combinations of both masters and men have existed for years; that both have been prosecuted, but the men only have been punished; that benefit societies have been used as cloaks for combination; that arbitration has been successful and that arbitration laws should be consolidated, amended, and made applicable to all trades; that combination laws have merely irritated the parties affected and had better be repealed; but that masters and men must be protected from violence; that the laws against the emigrations of artizans are productive of more harm than good; and that, as regards the export of machinery, there should be a further investigation.

1825, iv., 499—989.

Report from the Select Committee on Combination Laws, particularly as to Act 5 George IV., c. 95. The committee recommended that the general common law prohibition of combination should be re-established, but that combinations relating only to wages and hours of labour should remain legal. The report contains the following important appendices :—

8. Rules, Orders and Regulations to be observed by the members of the Cotton Jenny Spinners' Union Society, Stockport. Established September 4th, 1824. Pp. 531–2.

16. Articles of the General Association of Weavers in Scotland. Instituted 1824. Pp. 550—2.

The following papers will be found in the evidence :—

1. Confession of John Kean from Glasgow Jail, 9th May, 1825. Kean describes the organisation and methods of the Glasgow Spinners' Union. P. 331 of evidence.

Doctors' certificates of the condition of people who had been "vitrioled." Pp. 331–2.

2. Notice issued by the Glasgow Cotton Spinners on locking-out their hands to suppress the union, 3rd January, 1824. Pp. 322–3.

1837–8, viii., pp. 639.

Report from the Select Committee on Combinations of workmen; together with the minutes of evidence and appendix.

The committee reported only evidence. It had been appointed in consequence of the outrages at Glasgow and the action of the trade societies of Dublin and Cork. Very important evidence relating to the cotton industry was given. Among the appendices are :—

1. Information sworn against certain cotton-spinners of Glasgow. Pp. 287—8.

2. Precognitions taken in the case of Mary M'Shaffery. 289—303.

3. Articles of the Association of Operative Cotton-spinners of Glasgow and neighbourhood, 303—6; also contents of a small book "Emigration" found in the committee-room. 306–7.

4. Rules of the Associated Cotton Spinners of Manchester and neighbourhood. Revised and amended 9th March, 1837. Signed by Wm. Arrowsmith, Sec. 307–9.

7. Details of the weight of a carriage spinning fine numbers (15 cwt., 2 qrs., 19 lbs.). 310.

8. A carriage for coarse numbers; force required to move it; and description of a spinners' work. 310–11.

9. Tables of comparative mortality, etc. in several places in England and Wales, drawn up by the Manchester Cotton Spinners' Association and signed by John Doherty and David M'Williams.

The following papers were also handed in :—

Pp. 215–6. Proclamation by the united trades in Glasgow on the arrest of the Spinners' Committee.

Address to the Public from the Master Spinners of Fine Numbers in Manchester, 14th July, 1829. Pp. 270–1.

B. OTHER AUTHORITIES.

I. Works relating primarily to Industrial and Commercial Conditions in Early Years.

Aiken, John. A description of the country from 30 to 40 miles round Manchester. 1795.

Andrew, Samuel. Fifty Years Cotton Trade. A paper read to the Economic Section of the British Association in 1887. Mr. Andrew is secretary of the Oldham Master Cotton Spinners' Association, and has an intimate first-hand knowledge of the industry.
See also Rowbottom's Diary.

Ashworth, Henry. Statistical Illustrations of the Past and Present of Lancashire. 1842.

Baines, Edward, Junior. History of the Cotton Manufacture in Great Britain. 1835. The standard work on the Cotton Industry for early years.

Baines, E. The social, educational and religious state of the manufacturing districts. 1843.

Banks, Thomas (Secretary of the Preston Spinners). A short sketch of the Cotton Trade of Preston for the last 67 years. 1888. (Webb collection, vol. 25, Miscellaneous Trade Union Documents, 23, in the Brit. Lib. of Pol. Science, London School of Economics and Political Science.)

Bazley, Thomas. A lecture upon cotton delivered at the rooms of the Society of Arts in connection with the exhibition of 1851 by the President of the Manchester Chamber of Commerce and Manufacture. 1852.

Butterworth, Edwin. Historical Sketches of Oldham. New edition brought out after the death of the author. 1856. Originally published in 1847 or 1848. A most valuable work. The author had an extensive knowledge of the Oldham people, their records and traditions. Edwin Butterworth was born in 1812 and died in 1848. He assisted Edward Baines with the history of Lancashire.

Butterworth, Edwin. An historical account of the towns of Ashton-under-Lyne, Stalybridge and Dukinfield. Ashton, 1842.

Calico printer. A letter to the Rt. Hon. Lord Althorp on the subject of the duty on printed cottons. 1830. Manchester Library.

Cleland, James. Description of the City of Glasgow, comprising an account of its ancient and modern history, its trade, manufactures, commerce, health, and other concerns. 1840.

Cotton Trade, a complete history of the, etc.; to which is added, an account of the chief mart of cotton goods, The Town of Manchester. By a Person concerned in Trade. 1823. The author obtained much of the information from *Rees' Cyclopedia*, 1819.

Crisis, an important, in the Calico and Muslin Manufactory in Great Britain, explained. 1788. The author feared the ruin of the muslin trade through the competition of India. His fear seems to have been quite unfounded. The pamphlet is severely criticised by Baines, p. 216 *et seq.*, and by Ure (*Cotton Manufacture*, vol. i., 297—9, last edition).

Ellison, Thomas. The Cotton Trade of Great Britain, including a history of the Liverpool Cotton Market and of the Liverpool Cotton Brokers' Association. 1886. Contains full Statistical Tables. The author possesses a complete first-hand knowledge of his subject, and has published extensively upon it in annual reports and otherwise.

Exportation of Cotton Twist. Several pamphlets on this question are in the Manchester Library. The most important are Radcliffe's, and three letters by Mercator (two in 1800 and the last in 1804). Mercator argued against imposing an export tax.

Léon Faucher. Etudes sur Angleterre. 1845. Portions have been translated as "Manchester in 1844" (1844). The portions translated had appeared in the *Revue des deux Mondes*.

French, Gilbert J. The Life and Times of Samuel Crompton. 1859. This work, among other interesting appendices, contains a copy of a paper read to Section G of the British Association in 1858 by Robert Cole, F.S.A., in which the author brought forward evidence to prove that Lewis Paul, and not John Wyatt, was the inventor of the first machine for spinning by rollers. Third edition, 1862, without appendices. (The quotations in the text are from the third edition unless otherwise stated).

Guest, Richard. A compendious History of the cotton-manufacture, with a disproval of the claim of Sir Richard Arkwright to the invention of its ingenious machinery. 1823. Contains numerous illustrations.

Guest, Richard. The British Cotton Manufacture and a reply to an article on Spinning Machinery, contained in a recent number of the *Edinburgh Review*. 1828. The article in question was written by J. R. McCulloch.

Hammond, M.B. The Cotton Industry. Part I. The cotton culture and the cotton trade. 1897. A list of authorities is appended.

Helm, Elijah (Secretary of the Manchester Chamber of Commerce). Chapters in the History of the Manchester Chamber of Commerce, 1902. Based on the minute books of the Chamber and of the earlier "Commercial Society."

Kay, John, of Bury, a descendant of. A testimonial in behalf of merit neglected and genius unrewarded, and record of the services and sufferings of one of England's greatest benefactors. 1846. With numerous illustrations of machinery. Manchester Library.

Kennedy, John. Miscellaneous Papers, on subjects connected with the manufactures of Lancashire, 1849. Printed for private distribution only. The work contains the following papers relating to the cotton industry, the first two of which were read to the Literary and Philosophical Society of Manchester.

Observations on the rise and progress of the Cotton Trade in Great Britain, particularly in Lancashire and the adjoining counties. November 3rd, 1815.

A brief memoir of Samuel Crompton, with a description of his machine called the mule, and of the subsequent improvement of the machine by others. February 20th, 1830.

Brief notice of my early recollections, in a letter to my children.

Two copies of the work are in the possession of Dr. Edwin Cannan, Oxford.

Montgomery, James. The cotton manufacture of the United States of America, contrasted and compared with that of Great Britain. Glasgow, 1840. Manchester University and Patent Office Library.

Ogden, James. A description of Manchester . . . with a succinct history of its former original manufactories, and their gradual advancement to the present state of Perfection at which they are arrived. By a native of the town, 1783. Mr. W. E. A. Axon has identified the author as one James Ogden, of Manchester, who is thus referred to in the prefatory advertisement (vii.) to Aikin's History of Manchester :—

"It is proper also to acknowledge, that a great part of the history of the trade and manufactures of Manchester has been taken from the printed account of the same by Mr. James Ogden, improved by his written communications; and that this ingenious person has been employed by the Publisher in the collection of materials respecting several of the manufacturing towns in the North-eastern part of Lancashire."

Much of the description of the cotton trade in Aikin is taken almost word for word from Ogden's tract. In 1887 Mr. Axon republished the tract with an introduction, under the title "Manchester a hundred years ago." James Ogden was born in Manchester in 1718 and lived there most of his life. He was first a fustian cutter, then a schoolmaster. He died in 1802.

Oppel, A. Die Baumwolle; nach Geshichte, Anbau, Verarbeitung und Handel, sowie nach ihrer Stellung im Volksleben und in der Staatswirtschaft. 1902. Contains a full bibliography.

Radcliffe, William. Origin of the New System of Manufacture, commonly called "power-loom weaving," and the purposes for which this system was invented and brought into use, fully explained in a Narrative containing William Radcliffe's struggles through life to remove the cause which has brought this country to its present crisis. 1828. This is the Radcliffe who assisted the agitation for an export tax on yarn, and who, in conjunction with Thomas Johnson, invented the dressing-machine. This book is of great value for the account it gives of industrial arrangements from the end of the 18th century. On pages 73—77 are given the address of the Weavers' Association, drawn up on 13th May, 1799 by representatives from practically all the weaving centres in Lancashire, in which the operatives ask for legislation, and also a further address dated 29th June, 1799, in which they ask for a joint committee with the masters, and deprecate the exportation of "raw and half-wrought material."

Radcliffe, William. Exportation of Cotton Yarns. 1811. Strongly in favour of a check. Manchester Library.

Rees' Cyclopædia. Articles on cotton (1808), spinning (1816), and weaving (1818). For the dates of these articles see "An attempt to ascertain the actual dates of publication of the various parts of *Rees' Cyclopædia,*" by B. D. Jackson, London, 1895.

Schulze-Gaevernitz. Der Grossbetrieb: Ein Wirthschaftlicher und sociales Fortschritt: Eine Studie auf dem Gebiete der Baumwoll-industrie. 1892. Translated as The Cotton Trade in England and on the Continent, by Oscar S. Hall, 1895. The quotations in the text are from the translation.

Rowbottom's Diary. A manuscript diary of a weaver of Oldham, covering almost the whole of the period 1787 to 1830, which was found among the papers of Edwin Butterworth, and is now in the Oldham library. Mr. S. Andrew (the Secretary of the Oldham Master Cotton Spinners' Association) edited the diary in a series of articles in an Oldham paper, the *Standard,* under the title *The Annals of Oldham* (beginning January 1st, 1887), but they have not appeared in book form. The diary is particularly interesting as when the author, who has been identified as one Rowbottom, began to keep it there were apparently no factories in Oldham, but when he ceased the last hand-loom weavers of the town were deserting a calling which could no longer provide them with a living.

Ure, Andrew. The cotton manufacture of Great Britain, investigated and illustrated, with an introductory view of its comparative state in foreign countries. 2 vols. 1836. Edition by P. L. Simmonds, with a supplement "completing the statistical and manufacturing information to the present time," 1861. 2 vols. (The quotations in the text were from the later edition.)

Ure, Andrew. The Philosophy of manufacture: or, an exposition of the scientific, moral, and commercial economy of the Factory System of Great Britain. 1835.

Edition by P. L. Simmonds "continued in its details to the present time." 1861. Dr. Ure was born in 1778 and died in 1857. He superintended the practical school of Chemistry at the Andersonian Institute of Glasgow.

Watts, James. Facts of the Cotton Famine. 1866.

Wheeler, James. Manchester: its political, social and commercial History, ancient and modern. 1836.

II. Works relating primarily to Labour Questions in Early Years.

Appeal, an, to the Public in general, and to the Mechanics in particular. Issued by order of the committee for conducting the defence of the fifteen cotton spinners. London, December 24th, 1818. Manchester Library.

Arbitration, Report of Proceedings of, held at Bolton on the 9th, 10th, and 12th October, 1874. Brit. Lib. Pol. Science.

Ashworth, Henry. An inquiry into the origin, procedure, and results of the strike of the operative cotton spinners of Preston, from October, 1836, to February, 1837. (Read to the British Association in September, 1837. Printed in the *Statistical Journal and Record of Useful Knowledge* for November, 1837, pp. 86—91; also published as a pamphlet in 1838, of which there is a copy in the Manchester Library.

Ashworth, Henry. The Preston Strike, an enquiry into its causes and consequences. The substance of this was read before the statistical section of the British Association at its meeting in Liverpool in 1854. Manchester Library.

Baernreither, J. M. English Associations of Working Men. Translated by A. Taylor. 1889.

Bamford's Passages in the Life of a Radical and Early Days. 2 vols. Edited by Henry Dunckley (Verax). 1893.

Bowley, A. L. Wages in the United Kingdom in the nineteenth century, 1900. In section xv. of this work wages in the cotton trade are dealt with.

Brentano, L. On the History and Development of Gilds and the Origin of Trade Unions. 1871.

Brown, John. Memoirs of Robert Blincoe, an Orphan Boy; sent from the Workhouse of St. Pancras, London, at seven years of age, to endure the Horrors of a Cotton-Mill. Printed and published by J. Doherty, Manchester, 1832. It appeared originally in 1828 in the *Lion*, edited by R. Carlile.

C. W. and M(ather) R(alph). An impartial representation of the case of the poor Cotton-spinners in Lancashire, etc., with a mode proposed to the Legislature for their relief, etc. 1780.

Children employed in cotton factories, Information concerning the state of, 1818. Manchester Library.

Claims of Labour, The. An essay on the duties of the employers to the employed. Anonymous, 1844, London. Manchester Library.

Combination and arbitration laws, artizans and machinery. Abstract of the Acts repealing the laws against Combinations of Workmen, and emigration of artizans; abstract of the Act arbitrating differences between workmen and their employers; speech of Joseph Hume, M.P., in the House of Commons on the 12th February, 1824; lists of the committee of the House of Commons, and of the witnesses examined; and an address to the Working People, by George White, clerk to the honourable committee. 1824.

In a note at the beginning it is said that the hopes of the committee that the workmen would be temperate in the exercise of their restored rights had been disappointed by the proceedings of the weavers in Glasgow and some workmen in London. A letter from Joseph Hume to the Chairman of the Committee of Operative Weavers in Glasgow is given. In this the proscription of Hutchinson (for paying low rates) is deprecated as an offence against the 5th and 6th sections of the new Act; the weavers are told that they are acting foolishly in attempting to put down competition among the masters; and apprenticeship regulations are seemingly approved. Manchester Library.

On Combinations of Trades, 1831, London. Anonymous. Criticises trade unions, using much of the information brought to light by the committees of 1824 and 1825. Appendix ii. to this pamphlet consists of the resolutions passed at the second meeting of delegates of the operative cotton spinners of England, Ireland and Scotland, held at Manchester from the 16th to 20th December, 1830. Appendix iii. is the resolution and laws of the National Association for the Protection of Labour adopted at a meeting of delegates at Manchester on June 28th, 29th and 30th, 1830; and after this is printed the account of moneys received by that association from July 31st, 1830, to March 5th, 1831.

Constable's Accounts, Manchester, 1612—47 and 1743—76. 3 volumes. Edited by J. P. Earwaker, 1891.

Cotton Factories, an enquiry into the principle and tendency of the Bill now pending in Parliament for imposing certain restrictions on. 1818. Manchester Library.

Defence Fund, The Manchester Spinners and Manufacturers. Report of the committee. 1854. Manchester Library.

Discarded Spinster, the; or, a Plea for the Poor, on the impolicy of Spinning Jennies, a poem. London, 1791. British Library of Political Science, 12,452 (pamph. 176).

Engels, F. The condition of the working classes in England in 1844. 1892.

Exposure, An, of the Spy-system pursued in Glasgow during the years 1816—20, with copies of the original letters of A. Hardie . . . The whole edited by a Ten-Pounder. 15 Nos. 1833.

Fielden, John. The curse of the Factory System. 1836.

Gammage, R. G. History of Chartism, 1894.

Hall, William. Vindication of the Chorley Spinners. 1826. Gives an account of a lock-out at Chorley in 1824. The author describes the customs in the cotton mills in which he spent his childhood and speaks strongly of the hard lot of children. Manchester Library.

Hanson, Joseph. The Trial of an indictment against, for a conspiracy to aid the weavers of Manchester in raising their wages (with a preface by the Defendant). 1809. Manchester Library.

News of the rejection of the Weavers' Bill had apparently been received at Manchester, and on May 25th, 1808, the weavers met at St. George's fields. Colonel Hanson of Strangeways Hall was said to have incited them to riot at this meeting. He was afterwards sentenced to a fine of £100 and six months' imprisonment. Hanson was the son of a weaver and had been a candidate for Parliament at Preston in 1807. He gave evidence to the Committee to consider the Weavers' petitions in 1808.

Holland, G. C. The Millocrat. Seven letters by the Physician to the Sheffield General Infirmary. 1841.

Holyoake, G. J. The History of Co-operation in England : its literature and its advocates. 1875—7.

Hours of Labour, mealtimes, etc., in Manchester and its neighbourhood, a sketch of the. March 1st, 1825. Written from Manchester, 25th February, 1824.

Howell, George. The Conflicts of Capital and Labour historically and economically considered, being a history . . . of the Trade Unions of Great Britain. Second and revised edition. 1890.

Kay, James Phillips. The moral and physical condition of the working classes employed in the cotton manufacture in Manchester. 1832.

Lists, the regulation of wages by, in the Cotton Industry—Spinning. Report to the British Association. 1887.

Lists, the regulation of wages by, in the Cotton Industry—Weaving. Report to the British Association. 1887.

Machinery, letters to the present generation on the unrestrained use of. Norwich, 1831. Manchester Library.

Manual Labour *v.* Machinery by the member for Lanarkshire. 1834.

Manufacturing population, Inquiry into the state of. Anonymous. 1831.

Marcroft, William, Senior. The Marcroft family, a history of strange events. Rochdale, 1889. British Library of Political Science.

Marshall, James, Solicitor, supreme Courts. Report of the Trial of Thomas Hunter, Peter Hacket, Richard M'Niel, James Gibb and William M'Lean, the Glasgow Cotton-spinners, on charges of murder, hiring to commit assassinations, and committing, and hiring to commit, violence to persons and property, to which is annexed statistics of the Spinning trade, etc., of Glasgow, by Peter M'Kenzie, editor of *The Reformer's Gazette*. 1838.

Masters' Associations. Reports, etc.

Newspapers. See list on pp. 299—300.

Owen, Robert. Observations on the Cotton Trade, 1803.
Observations on the Cotton Trade, 1815.
Cotton Mill Act, proposed by Mr. Owen, with observations of Opponents. 1815.

Observations on the effect of the Manufacturing System: with hints for the improvement of those parts of it which are most injurious to health and morals. London, 1815.

Third edition of the same, to which are added two letters on the Employment of Children in Manufactories. 1818.

Autobiography, with selections from his writings and correspondence; 2 vols. 1857 and 1858. All the above writings by Robert Owen will be found in vol. i.*a*.

Percival T. Letter to a friend occasioned by the late disputes between the checkmakers of manchester and their weavers. Halifax, 1759. Manchester Library.

Percival, Thomas. Observations on the State of Population in Manchester, and other adjacent places. 1773.

Further observations on the State of Population in Manchester, and other adjacent places. 1774.

Place, MSS. See Webb, MSS.

Potter, Edmund, M.P. Some opinions on Trade Unions and the Bill of 1869. 1869.

Prentice, Archibald. Historical Sketches and Personal Recollections of Manchester. Intended to illustrate the progress of public opinion from 1792 to 1832. 1850.

Proprietors of Cotton Mills and the persons employed in them, a Short Essay written for the Service of. 1784. The author deals with the question of contagious disorders in mills. Manchester Library.

Proprietors of cotton works in Glasgow and the vicinity, statement of; case of the operative cotton-spinners in reply to that statement; reply by the proprietors. 1825. Gives an account of the Glasgow disputes and strike of 1823—5. Manchester Library.

Quinquarticular System of Organization. To the operative spinners of Manchester and Salford. 1834. Pp. 12. The system is evidently expounded by one in authority since at the conclusion is printed: "The General Meeting, to take into further consideration this important subject, will be held at the Prince's Tavern, on Thursday evening, the 10th day of July, 1834." Manchester Library.

Ramsey Congress. A report of the proceedings of a delegate meeting of the operative spinners of England, Ireland and Scotland, assembled at Ramsey, Isle of Man, on Saturday, December 5th, 1829, and three following days. Drawn up by Doherty and concluding with an address from him to the operatives. Pp. 56. Thirty-two resolutions were adopted, but the debate on the first fifteen only is reported at any length. Manchester Library.

Ready numberer, or the Cotton Spinners Calculator: a table calculated to show the number of hanks required on a set or bundle, to make the yarn any such number, from 11 hanks in one pound up to 210. To which is annexed a wrapping table computing the length of a whole set from the length of one cop. By Thomas Jones, Evan Evans and John Thornton, cotton spinners. 1798.

One object of the book is said to be to enable masters to find out easily what to pay their spinners, since masters and men had agreed that the fairest way of reckoning sets was by the whole weight and length (p. 6). Manchester Library.

Richmond, A. B. Narrative of the condition of the manufacturing population and the proceedings of Government which led to the State trials in Scotland . . . for administering unlawful oaths in 1817, etc. The author was a Government spy (see Exposure of Spy System and Trial for libel, Richmond *v.* Simpkin Marshall, etc). He gave evidence to the Committee on Combinations in 1824. 1825.

Richmond, A. B. Trial for libel, etc., Richmond *v.* Simpkin Marshall and others. 1834.

Robinson, Samuel, of Wilmslow. Friendly letters on the Recent Strikes, from a manufacturer to his own workpeople. London, 1854. Refers to the Preston strike. Manchester Library.

Rose, Henry (probably secretary of the Weavers' Association). Manual Labour *versus* Brass and Iron: Reflections in defence of the body of cotton spinners, occasioned by a perusal of the Description of Mr. Roberts' Self-acting mule. Written to prove that "the most powerful enemy" to the operatives is machinery. Manchester Library.

Rules of Trade Unions. See list on pp. 300–2.

Scrope, George Poulett, M.P. Two letters of, to the chairman of the Central Committee of the Hand-loom Worsted Weavers of the West Riding of Yorkshire: with their answers to the same. 1835. Manchester Library.

Senior, Nassau W. Historical and Philosophical Essays. Vol. ii., chapter vii., pp. 118—171. 1865. This contains a part of the author's report on trade unions to Lord Melbourne.

Senior's Letters on the Factory Act, Letter to Lord Ashley, criticising, 1838. Manchester Library.

Shorrock, Eccles. History of the Formation of the Blackburn Association in 1852. 1880. Manchester Library.

Social Science Association. Report on Trades' Societies and Strikes. 1860. Contains the following:—

Account of the strike and lock-out in the cotton trade at Preston in 1853, by James Lowe. 207—264.

Account of the weavers' strike at Padiham in 1859, by William A. Jevons. 433—472.

Account of spinners' strike at Ashton-under-Lyne, in 1830, by William A. Jevons. 473—478.

Abstracts of Parliamentary Reports, trade union rules, and miscellaneous documents.

Swinton, Archibald, advocate. Another report of the trial of the Glasgow cotton spinners with appendix of documents and proceedings. 1838.

T. Letters on the utility and policy of employing machines to shorten labour, occasioned by the late disturbances in Lancashire, 1780. The first two letters are dated November 19th and November 22nd, 1779. The last is undated.

Taylor, W. Cooke. Notes of a Tour in the Manufacturing Districts of Lancashire. 1842.

Taylor, W. Cooke. Factories and the factory system; from Parliamentary documents and personal examination. 1844.

Ten Hours' Bill, a selection of Facts and Arguments in favour of the, as regards its probable effects on commerce and wages, if universally adopted. Published by the Committee, Manchester, 1845. Lengthy extracts are given from Fielden's *Curse of the Factory*

System (1836). Kenworthy's letter to employers (*Inventions and Hours of Labour*, 1842) is quoted almost entire. Kenworthy was managing partner in a large spinning and manufacturing business. There is also, among less important matter, a letter from Robert Gardner, an employer at Preston.—Manchester Library.

Thom, W. Rhymes and Recollections of a Hand-loom Weaver. 1844.

Torrens, R., M.P. Wages and Combinations. 1834. The fifth chapter is a criticism of Fielden's scheme for limiting the Hours of Labour.

Tufnell, E. C. Character, Objects and Effects of Trades' Unions. 1834. Said to be written by E. C. Tufnell, one of the Factory Commissioners (Webbs' History, 126*n*).

Wallas, Graham. Life of Francis Place. 1898.

Ward, J. Workmen and Wages at home and abroad, or the effects of strikes, combinations, and trades' unions. 1868.

Weavers' Cotton, Act, Observations on the. 1804. By one who attended some of the committees on the weavers' petitions which gave rise to the Act. A pamphlet written from the *Laisser faire* point of view. The author advocates the removal of all regulations of the trade, "excepting such only, as relate to it externally"; and then adds in a note, "Doubts have been entertained by high authority, as to the propriety of these even being suffered to remain." Manchester Library.

Weavers, Oldham, Resolution of in 1758. Signed by eighteen people. A manuscript in the possession of Mr. S. Andrew, of Oldham. The text and signatures are in the same hand-writing which is probably that of the secretary J. Greaves, Hollinwood.

Webb, Sidney and Beatrice. The History of Trade Unionism. First edition, 1896.

Webb, Sidney and Beatrice. Industrial Democracy. First edition, 1897. Two vols.

Newspapers (in chronological order).

The Gorgon, a penny weekly paper, edited by J. Wade, a journeyman wool-sorter. According to a note written by Wade on the volume in the British Museum, which originally belonged to Francis Place and was lent by him to Wade in 1842, many of the later articles on Wages were written by Francis Place. The volume in the British Museum contains numbers (beginning with the first) from May 23rd, 1818, to April 24th, 1819. The price was raised to 1½d.

The United Trades' Co-operative Journal. Price: numbers of the first volume 2d., later ones 2½d. The first organ (unstamped) of the National Association for the Protection of Labour. Vol. i., all the numbers, 1—26 (March 6th to August 28th, 1830), and vol. ii., numbers 27—31 (September 4th to October 2nd, 1830), pp. 80. The numbers of vol. ii. contain about half as much again as those of vol. i. This paper came to an end when the Commissioner of stamps insisted upon each number bearing a fourpenny stamp.

Voice of the People, the weekly organ of the National Society for the Protection of labour after the suppression of *The United Trades' Co-operative Journal.* Price 7d. The numbers (beginning with the first) from January 1st, 1831, to September 24th, 1831, are in the British Museum. Edited by Doherty.

The Poor Man's Advocate, and People's Library. A weekly paper issued by Doherty after the *Voice of the People* ceased to appear. It was published in Manchester and dealt very largely with the Factory System. In the issue for June 9th, 1832, is a portrait of Robert Blincoe, the subject of *Memoirs of Robert Blincoe.* Thirty-three numbers, beginning with the first dated January 21st, 1832, and ending with the 33rd and last, dated September 1st, 1832, are in the Manchester Library.

On September 8th appeared *A Pennyworth of Politics by the Poor Man's Advocate* (Manchester Library), and on the 15th *A Penny Paper by a Poor Man's Advocate* (Manchester Library).

The Union Pilot and Co-operative Intelligencer. Numbers 9 to 17 (March 10th to May 5th, 1832) of Vol. i., are in the Manchester Library. These numbers were 1d. each; the first eight had cost more. This paper was the official organ of the Manchester Trades' Committee and was printed and published by the secretary, H. N. Pullock. It was the successor to *The Voice of the People*, and was published with the press and types used for that paper (*Poor Man's Advocate*, March 24th, 1832, p. 73). The Manchester Trades'

Committee seems to have been what was left of the National Society for the Protection of Labour. On March 21st, this Society was revived under the title of "A general social compact for the Protection of Labour" (pp. 100, 113–4). Doherty, who had quarrelled with his committee, was at this time issuing *The Poor Man's Advocate;* and his paper and *The Union Pilot* were naturally inimical to each other. Doherty was savagely attacked in an article entitled "Who is the Poor Man's Advocate?" (March 31st, 1832, p. 121) and the epigram on "the apostate" of the week before was no doubt intended for him.

Herald of the Rights of Industry, February 8th to May 24th, 1834. The organ of the Society for National Regeneration. Manchester Library.

The Ten Hours' Advocate. Numbers 1—38 (September 26th, 1846 to June 12th, 1847), the whole issue. Manchester Library.

Rules of Trade Unions.

1747—56. The Worsted Small-ware Weavers Apology, together with all their Articles, which either concern their Society or Trade. To which is added a Farewell Discourse, made by their First Chair-Man. 1756. The articles relating to the government of the Society were adopted on June 6th, 1755. Of the others the earliest rule is dated August 15th, 1747. Manchester Library.

1795. Articles, rules, orders, and regulations, made, and to be observed, by and between the members of the friendly associated Cotton Spinners within the township of Manchester, in the County of Lancaster, and in other townships and places in the neighbourhood thereof; established the 31st Day of January, in the Year of our Lord, 1795, at the Three-Horse-Shoes, in the Market-Place, Manchester. 1795. The preamble gives as the object of the society friendly benefit for those afflicted with sickness or other misfortunes, also the defraying of funeral expenses. There are 28 rules signed by a chairman, three stewards and two inspectors. At the conclusion the following is printed :—

I have perused these articles and approve of them,
Manchester, Robert James.
25th April, 1795.

1795, April 22nd. Allowed and confirmed in open court of quarter sessions, held by adjournment at Manchester.

Jas Taylor.
Deputy Clerk of the Peace.
Manchester Library.

1824. Rules of the Union of Weavers associated for the purpose of obtaining a proper Remuneration for their industry, as well as establishing a system, which will in future guarantee those privileges which give Being to Contentment, Happiness and Independence. 1824. The rules were drawn up by a committee appointed at a general meeting held in St. George's Fields, Manchester, on Nov. 1st, 1824. The address preceding them is signed by Philip Rogerson (President) and Henry Rose (Secretary), perhaps the author of "Manual Labour *v.* Brass and Iron," published at Manchester on November 21st, 1825. The rules contain no provision for friendly benefit. The "Equalization of Prices" is given as one object. Manchester Library.

1829. Articles, Rules and Regulations of the Friendly Associated Society of Quilting Weavers of Manchester and its Neighbourhood, agreed to at a General Meeting of the Society held on February the 16th, 1829, at the House of Mr. John Stocks, sign of the Spread Eagle, Oldham Road. The wages question was stated to be the object of the Society. Grievances of general interest were not to be dealt with without the sanction of the Grand Lodge (a committee of four members from each lodge). Funeral benefit and 1s. 6d. a week for 6 weeks and then 9d. a week for 6 weeks for each loom idle, were provided by the Society.

Many other copies of early rules will be found in Parliamentary Papers and elsewhere. The following are the most important :—

1796 (Reprinted 1829). Rules of the Oldham Spinners. (MS. copy in Webb MSS. The original is in the possession of Mr. Thomas Ashton, Secretary of the Oldham spinners).

1824. Rules of the Stockport Jenny Spinners. (Reports, etc., 1825, iv., 531–2).

1824. Rules of Weavers' General Association, Scotland. (Reports, etc., 1825, iv., 550—2).

1830. Rules of the National Association for the Protection of Labour. (Appendix to *On Combinations of Trade*, 1831).

1837. Rules of Glasgow Spinners. (Reports, etc., 1838, viii., 303—6).

1837. Rules of Manchester Spinners. (Reports, etc., 1838, viii., 307—9).

1867. Rules of the United Kingdom Alliance of Organised Trades. (Webb Papers, vol. xxv. of Rules of Societies, also vol. cxviii. of Pamphlets).

Rules of modern trade unions, amalgamations, etc., periodic reports, financial statements, and reports of congresses, etc. (Webb collection in the British Library of Political Science).

WEBB COLLECTION OF MANUSCRIPTS and Trade Union Documents in the British Library of Political Science (London School of Economics). These were presented by Mr. and Mrs. Webb on the completion of their volumes on trade unions. The following relate to the Cotton Industry.

Manuscripts, Textiles I. (Cotton Spinners).

1. Local Textile Federations (cuttings from *The Cotton Factory Times* and answers to letters of enquiry).

2. Cotton Spinners, Glasgow (chiefly historical notes) : also note as to Belfast Cotton Spinners.

3. Old Federations of Cotton Spinners' Unions from 1845. (Extracts from the old circulars, newspaper cuttings, books and rules in the possession of Mr. Thomas Ashton, Secretary of the Oldham Province and President of the Amalgamation).

4. Cotton Spinners. (Rough draft of a general outline of the history of the spinners written in 1892. The few corrections by another hand were made by the late J. T. Fielding, the then Secretary of the Bolton Spinners).

5. Cotton Spinners, England. Manuscript materials for history.

6. Cotton Spinners Amalgamation, also notes as to United Textiles' Association.

Manuscripts, Textiles II. (Cotton Spinners).

1. Sketch of History of the Bolton Spinners (written in 1892).

2. Bolton Spinners. Extracts from old minute books and printed reports from 1844 to 1880 : also replies to lists of questions and

cuttings from *The Cotton Factory Times;* also abstract of rules of the Bolton Society, adopted 1848, revised 1855.

3. Local Societies included in the Amalgamated Cotton Spinners—from A to H. (Notes and replies to lists of questions).

4. Local Societies (continued)—from M to W.

Manuscripts, Textiles III.

3. Notes on trade unions among operatives engaged in occupations subsidiary to the spinning and weaving of cotton. (Including answers to enquiries, letters, newspaper cuttings, etc.).

4. Oldham Spinners. Extracts from documents, 1796—1890; also answers to enquiries. Among the former is a full manuscript copy of the following, in the possession of Mr. Thomas Ashton, secretary of the Oldham Province :—

Articles, Rules, Orders, and Regulations made and to be observed by and between The Friendly Associated Cotton-Spinners within the township of Oldham, in the County of Lancaster and in other townships and places in the neighbourhood thereof. Established the 18th day of June, 1796, and renewed the 7th day of January, 1797. Now held at the house of Charles Jackson, The Mason's Arms, in Oldham. Oldham, re-printed by D. Evans, Church-street, 1829. There are 28 rules. At the back appears the following :—

Manchester, 2nd January, 1797.

"I have perused these articles and approve of them."

"Robert James."

1797, January 18th.

"Allowed and approved the within rules at a General Quarter Sessions of the Peace held by adjournment at the New-Bayley Court-House in Salford."

"James Taylor.
"Deputy Clerk of the Peace."

5. Oldham Cotton Spinners. Historical sketch (written 1892), and miscellaneous notes and newspaper cuttings.

Manuscripts, Textiles IV. (Cotton Weavers).

1. Cotton Weavers, England—history, general description and details. (Including answers to questions and newspaper cuttings).

2. Cotton Weavers, England. Local particulars relating to the various towns and branches—A to O.

3. The same continued—P to T.

4. Notes on Cotton Weavers in Scotland.

Also the following volumes of rules of Societies and joint committees; reports, accounts of conferences, arbitration proceedings and actions at law; circulars, wages lists, etc :—

Volume 7, Cotton Spinners' Amalgamation; 8, Cotton Spinners and Card and Blowing-room Operatives; 9, Cotton Spinners, Bolton; 10, Cotton Spinners, Oldham; 55 and 95, Cotton Spinners, Miscellaneous; 50, 51, 53 and 76, Textiles, Miscellaneous; 52, Textiles, Miscellaneous, Rules; 100, Weavers and Overlookers; 16, Federations; 103 and 104, Trades' Councils, England; 25, Miscellaneous Trade Union Documents, containing Rules of the United Kingdom Alliance of Organized Trades, 1867. (Another copy is in "Pamphlets, 118").

INDEX.

Administration of Factory Acts, 111*n*.
Agriculturists as weavers, 9—11, 45
Alien immigrant weavers, 1
,, ,, merchants, 6, 141
Amalgamated Societies of spinners, weavers, &c. (*See* combinations, spinners; combinations, weavers, &c.)
Anti-corn Law League, 226
Apprentices of Manchester Merchants, 6
Apprenticeship, 190—2, 257—8
Apprenticeship system, 259
Arbitration, 275
Arbitrators, 244*n*.
Arbitration Acts, 185—6
Association, Cotton, Manchester, 115
,, ,, Liverpool, 125
,, settlement (Cotton Market), 132
Associations, employers, 206—11, 239—41
Associations, operatives. (*See* Spinners, Weavers, &c.)
Atrocities at Glasgow, 199
Automatic loom, 32—3

Blanketeers, 190
Bolton in 1753, 8
Bolton list, 269—72
Bolton Province, spinners, 233—4, 247—8
Bowl-cork Manufacturers, 42
Brokers, Cotton, 116, 124
Brooklands Agreement, 252

Card and Blowing Room Operatives, Unions, 232—3
Carding machinery, 55, 72—3
Certifying Surgeons, 92, 108*n*.
Chamber of Commerce, Manchester, 66, 206
Chartism, 223—6
Children in Factories, 84—90
Christian Socialists, 228, 230
Claims of cotton operatives, 249—55
Climate of Lancashire and effects, 153
Cloak-rooms in factories, 110
Cloth market, 134—5
Cloths, quotations of, 147
Combination laws, effect of repeal, 200
Combinations (trusts, &c.), 174—8
Combinations, Masters', 206—11, 239—41
Combinations, Card and Blowing-Room Operatives, 232—3
Combinations, Spinners, 191—206, 210—227, 233—261
Combinations, Weavers, 180—9, 198—201, 232—3
Consignment system, 136
Constitution of Spinners' Amalgamation, 246—7
Constitution of trade unions, 241—8
Co-operation, 222, 225, 228—31
Co-operative mills and factories, 230—1
Co-operation, productive, 229—31
Co-operative Stores, 229—31
Cotton Association, Liverpool, 125
,, ,, Manchester, 115
Cotton Bank, 131
Cotton Brokers, 116
Cotten Buying Company, 125
Cotton Clearing house, 124, 131
Cotton Cloth Factories Act, 109
Cotton, imports, 37*n*. 144
,, conditions of supply, 120—1
,, estimates of crop, 121
,, grading of, 121—2
,, importations of to-day and a hundred years ago, 143
,, nature of demand for, 119, 120
,, spot, quotations of, 146
Cotton dealers, Manchester, 113
Cotton Exchange, Liverpool, 125
Cotton Market, comparison with Stock Exchange, 116, 117
Cotton Market, conditions of development of, 118, 119
Cotton Market in early days, 113, 114
,, ,, information at disposal of, 122—3
Cotton Merchants, Liverpool importers, 124—5
Cotton Merchants at ports, 124
Coupling of wheels, 258—9

Dealers at Oldham, 8
Dealers, Manchester cotton, 113
Deferred delivery, 126
Differentiation, industrial, 156—7, 164—7
Distribution of cotton operatives in 1838 and 1898, 149, 151
Doffing system, 259
Double- and treble-decking, 259
Draw-boys, 22
Dressing-machine, 30
'Driving', 219*n.* 220, 255
Drop-box, 19
Dutch-looms. (*See* Swivel-looms)
Dutch wheels, 54

Embezzlement of weft, 42
Emigration benefit, 215—6
Epidemics in factories, 89, 90
Employers' Associations, 206—11, 239—41
Employers' (Cotton) Parliamentary Association, 240
Exchange, Manchester, 137
Excise on Cotton Manufactures, 49—51
Executive of trade unions, 244, 245—6
Exports of Cotton Goods, statistics of, 144
Export of Yarns, 65—7

Factories, children in, 85—90
Factories, epidemics in, 89—90
Factories, sanitary conditions in, 109
Factory Act of 1802, provisions of, 87
,, ,, 1819, ,, 91
,, ,, 1826, ,, 91
,, ,, 1831, ,, 91
,, ,, 1833, ,, 92
,, ,, 1844, ,, 93, 107
,, ,, 1847, ,, 94
,, ,, 1850, ,, 95
,, ,, 1853, ,, 95
,, ,, 1874, ,, 96
,, ,, Cotton Cloth Factories Act, 109
,, ,, Particulars Clause, 273
Factory Act Reform Association, 103
Factory Acts, administration of, 111*n.*
Factory Acts, attitude of operatives towards, 97—104
Factory Acts, effect of on the output and wages, 105—7
Factory Law Amendment Association, 107
Factory Legislation, 85—111
Factory Legislation, general character of regulations, 110—111
Factory Occupiers, National Association of, 107
Farmer weavers, 9, 10, 11, 45
Federation of Trade Unions, 203—5, 208, 221—2, 229, 237
Federation of Spinners, Weavers, &c, (*See* spinners' combinations, weavers' combinations, &c.)
Fine Cotton Spinners' and Doublers' Association, 176
Fining, 218—9
Fly-shuttle, 18, 19
Foreign Merchants, immigration of, 6, 141
Foreign trade, 5, 65—7, 136—7, 140—4
Foreign trade, conduct of, 136—7
Free Trade question, 226—7
Friendly Societies, relation to trade unions, 81—2
Fustian Masters, 16
Fustian Weavers, 40, 41
Fustian Tax, 50
Futures, 127—8
,, quotations of, 145

General Meeting of trade unions, powers of, 244—5
Geographical influences on industrial localisation, 152—3, 157
Girl piecers, 261
Glasgow, atrocities at, 199
,, Spinners, exclusiveness of, 205
Grand National Trades' Union, 222
'Grassing,' 219*n.*
Groupings of labour, 157—8

Hand-loom, increasing complexity of, 18—9, 22—3
Hand-loom weavers, 12, 36—48
,, ,, agriculturist, 9—11, 45
,, ,, classes of, 43
,, ,, combinations, 180—9, 198—201
,, ,, wages of, 43—4
Harness-looms, 22
Hiring looms, 25—6
,, turning, 61—3
Humid climate, effect of, 153
Humidity in Weaving sheds, 109

Immigrants, weavers, 1
,, merchants, 6, 141
Import duties, 49—52
Indicator, use of, 267
Insurance provisions of trade unions, 248—9
International Textile Congresses, 237
Intimidation (*See* Violence)
Ireland, industry in, 149
Irish trade, 2

Jacquard-looms, 23
Jennies, 54
Jenny-factories, 57, 59—61
Joining system, 259—60
Joint-stock businesses, types of, 173—4
Joint-stock enterprise, conditions of success, 171
Joint-stock enterprise in the Cotton industry, 172—3

Labour, characteristics of indifferent places, 158—160
Labour, distribution of in 1838 and 1898, 149, 157
Labour, distribution of betwsen spinning, weaving, and other processes, 179
Labour, groupings of, 157—8
,, unit of, 158
Labour movement in the 'thirties,' 221—2
Labour organisations (*See* combinations)
Lists, 262—76
Living wage, 250, 252—3
Localisation, industrial, 148—158
,, causes of, 152
,, effects of, 154—5
,, of branches of the Cotton industry, 156
Local merchants, 8
Locking-out, policy of, 210
Looms, hiring of, 25—6
Looms, automatic, 32, 33
,, dandy, 31
,, Dutch (swivel), 19, 20, 21
,, hand, increasing complexity of, 18—9, 22—3
Looms, harness, 22
,, Jacquard, 22
,, power, 27—35, 48
,, swivel, 19, 20, 21
Luddites, 77

Machinery, opposition to, 74—84
,, effects of, 82—4
,, legislation as to use of and fencing, 107—8
Machine-wrecking, 76, 77
Magnitude of businesses, conditions of, 167—171
Manchester Board of Health, 90
,, Chamber of Commerce, 66, 206
Manchester Congress (operative spinners), 202
Manchester Cotton Association, 115
,, Cotton dealers, 113
,, Cotton Market, 115
,, Exchange, 137
,, manufactures in 1727, 2
,. merchants, 4, 5—7, 137—42
Manchester trade in 1650, 2
,, woollens in the eighteenth century, 2
Manufacturers, bowl-cork, 42
Manufactures, Manchester in 1727, 2
Manufacturing process, early form. (*See* also under the different kinds of machines—looms, ring-spinning, &c.), 12, 13, 71—3
Marginal demand, 118*n*.
Marginal workman, 254—5
Masters, Associations of, 206—11, 239—41
Masters, fustian, 16
,, piece, 16
Merchant houses, reasons for their existence, 138—140
Merchants, immigration of, 6, 141
,, local, 8
,, Manchester, 4, 5, 6, 7, 137—42
Middleton fights, 198
Mills, size of, 58
Minimum wage, 185—9, 250. 252—4
Modern industrialism, coming of, 216—8
'Moral' 'Suasion, 238
Mules, 54
,, self-actor, 69
,, ,, slow introduction of, 70
Muslin-weavers, 39

National Association for the employment of labour, 229
National Association for the Protection of Labour, 203—5, 208, 221, 229

National Regeneration Society, 98
Non-Unionists, attitude of unionists towards, 238
Nibbling time, 96

Oldham, dealers at, 8
,, list, 268—72
,, Province, spinners, 234—5, 247—8
Operatives, distribution of between spinning, weaving, and other processes, 179
Operatives, distribution of in 1838 and 1898, 149—151
Operatives employed in cotton factories at different periods—percentage of each class, 112
Operatives, prosecutions of, 195—6
,, trade unions. (*See* Combinations). (*See* also Spinners, Weavers, &c.)
Options, 128—9
Orders of Secretary of State, 111
Owenism, 222

Particulars Clause, 273
Penalty, device of among employers, 209
Periodic settlements, 131, 132
Piecemeal strikes, 210
Piece-masters, 16
Piece-rates, differential, 420, 273—4
Piece-rates, spread of, 272
Piecers, 257—8, 260—1
Piecers, girls, 261
'Plug' riots, 198
Policies of operative cotton spinners, 256—61
Policies of trade unions, 255—6
Political interests of trade unions, 227—8
Power-looms, 27—35
Prosecution of operatives, 195—6
Protection of Labour, National Association for, 203—5, 208, 221, 229

Quinquarticular system, 194
Quotations of cloths, 147
,, spot cotton, 146
,, futures, 145
,, yarns, 147

Railway, Manchester and Liverpool, effect of on cotton market, 114
Ramsey Congress (operative spinners) 202
Referendum, 247*n*.
Regeneration Society, National, 98
Ring-spinning, 71
,, lists, 272
Risks in dealing in cotton, distribution of, 126
Rose's Act, 182

Sacred month, 224—5
Sanitary conditions in Factories, 109
Saw-gin, effect of, 121
Scotland, magnitude of industry in, 149
Self-actor mule, 69
Settlement Association (Cotton Market), 132
Ship Canal, Manchester, effect of on Cotton Market, 114—5
Shippers, 138—42
Shippers, classification of, 141—2
Short-time, 252—3
Sliding rates between districts, 275—6
Sliding scales, 274—6
Specialisation of processes, conditions of, 165—6
Specialism, industrial, 154—5
Speed list, 268—9
Spinners' Amalgamation, constitution of, 246—7
Spinners' (operative) combinations, 191—206, 210—227, 233—261
Spinners (Glasgow), exclusiveness of, 205
Spinning and Weaving, causes for early dissociation, 161
Spinning and Weaving, causes for unions of, 161, 163—4
Spinning and Weaving, causes for recent dissociation, 162, 163—4
Spinning and Weaving, different characteristics of the two businesses, 162—3
Spinning businesses, growth of, 60
Spinning by rollers, 53, 55—8, 74
Spinning lists, 263, 266—72
,, on commission, 63
,, prize for machine, offered by the Society of Arts, 12
Spinning, ring, 71
,, throstle, 70, 71
Steam weaving-sheds, 48
Stock Exchange, comparison of Cotton Market with, 116—7
Straddles, 130
Strike-pay, 201—2, 247
Strikes, control of, 195, 202, 204, 210—11, 247

Strikes, piecemeal, 210
,, sympathetic, 211
Subsidiary industries, 57, 155
Surgeons, certifying, 92, 108*n.*
Survival of fittest among Captains of industry, 170—3
Swivel-looms, 19—21
Sympathetic strikes, 211

Tax, fustian, 50
Tax on cotton manufactures, 49—51
Tax on export of yarns, proposed, 66
Throstle-spinning, 70—1
"Tommy" shops, 220
Trade in Cotton (*See* Cotton, Cotton Market, Cotton Merchants)
Trade, home (*See* Merchant Houses, Merchants)
Trade, foreign, 5, 65—7, 136—7, 140—4
Trade, foreign, conduct of, 136—7
,, ,, in yarns, 65—7
,, ,, statistics, 143—4
,, Irish. 2
,, Manchester, in 1650, 2
Trade Unions (*See* Combinations)
Truck Act of 1896, 219*n.*
Truck system, 220
Trusts, 174—8
'Turning,' hiring of, 61—3

Uniform weaving list, 266
United Movable Committee, 235
United Textile Factory Workers, 236—7

Victimising, 197
Violence in disputes, 197—9, 237—8

Wages, deduction from, 218—9
,, differential rates, 254—5, 273—4
Wages, hand-loom weavers, 43—4
,, lists, 262—76
,, minimum, 185—9, 250, 252—4
,, operative claims, 217—8, 249—55
Wages, sliding-rates between districts, 275—6
,, sliding-scales, 274—5
Warping-mill, 15
Warp-stop motion, 31, 32
Water-frame, 53, 55—8, 74
,, ,, effect on employment, 74
Weft-carriers, 34—5
,, embezzlement of, 42
,, giving out by merchants, 16—7
Weavers, fustian, 40, 41
,, muslin, 39
Weavers' combinations, 180—9, 198—201, 232—3 (*see also* Hand-loom Weavers)
Weaving (*see* loom)
,, continuous, 33
,, lists, early, 262, 264—6
Weaving-machine, the first, 18 *n.*
Weaving-sheds, hand-loom, 23—4, 26
,, ,, humidity in, 109
,, ,, steam, 48
Wheels (*See* Jennies and Mules)
Wheels, Dutch, 55
Women piecers, 261
Women workers, attitude of men's Unions towards, 213—15
Women workers, effect of legislation specially affecting, 106—7
Women, proportion employed in different places, 150—160
Woollen industry in early days, form of, 3
Woollens, Manchester, in the eighteenth century, 2
Working-classes (*See* Operatives, Spinners, weavers, &c.)
Working-class Limiteds, 230, 231
Working-men's Associations, Society for Promoting, 230

Yarn agents, 133
,, market, 133
Yarns and cloth exports, 144
,, export of, 65—7
,, quotations of, 147

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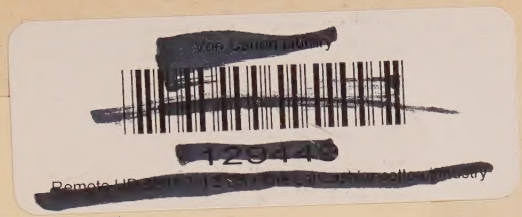

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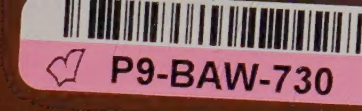
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